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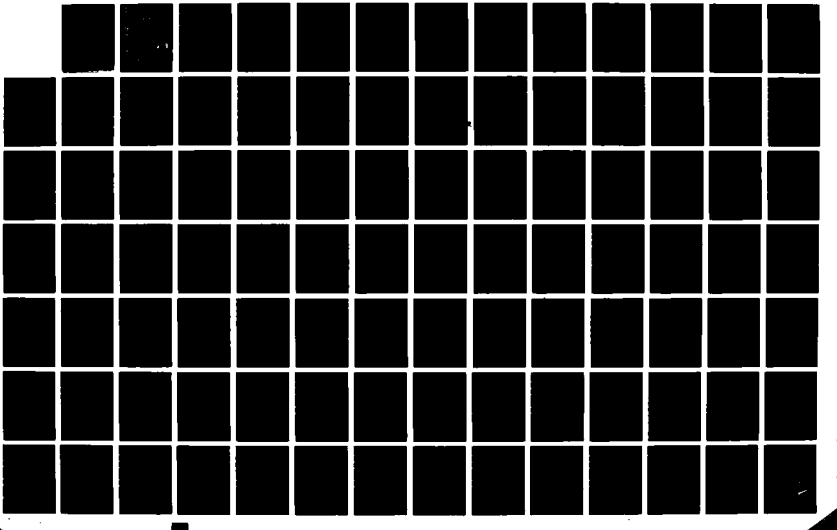

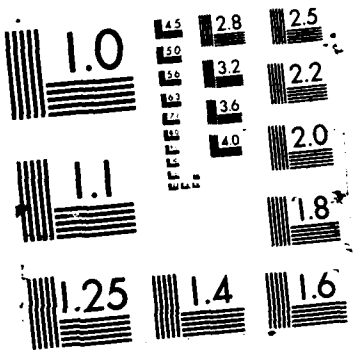
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Boeing 727 MLS Terminal Instrument Procedures (TERPS) Approach Data Collection and Processing

Data Report

Edward J. Pugacz

May 1987

DOT/FAA/CT-TN87/9

U.S. Department of Transportation
Federal Aviation Administration
Technical Center
Atlantic City International Airport, N.J. 08405

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16. Abstract

This report documents the approaches portion of the Fixed Wing Microwave Landing System (MLS) Terminal Instrument Procedures (TERPS) data collection and processing project using a Boeing 727 (B-727) aircraft. This is one part of the Fixed Wing MLS TERPS data collection and processing program being performed at the Federal Aviation Administration (FAA) Technical Center. The program was undertaken to collect flight test data in various aircraft to establish a data base for development of MLS TERPS criteria.

Data were collected during both missed approaches and landings using glideslopes of 3°, 3° CAT II, 3.5°, and 4° with all flights being tracked by ground based tracking systems.

Statistical processing was performed on both the airborne and tracker data, and various graphical plots were produced. The processed data were delivered to AVN-210 for inclusion in the MLS TERPS criteria development data base.

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EXECUTIVE SUMMARY

This report documents the Federal Aviation Administration (FAA) Technical Center's Boeing 727 (B-727) Fixed Wing Microwave Landing System (MLS) Terminal Instrument Procedures (TERPS) approach data collection and processing project. This is one portion of the Technical Center's MLS TERPS data collection program. As the implementation of MLS approaches, the application of Instrument Landing System (ILS) TERPS criteria to MLS guided procedures has become inadequate due to the MLS's more extensive guidance capabilities. The Technical Center's Engineering Division, ACT-100, was tasked by the Standards Development Branch, AVN-210, Aviation Standards National Field Office, through the Navigation and Landing Division, APM-400, with collecting and processing MLS TERPS flight test data in a Boeing-727 heavy jet aircraft. AVN-210 will use the data collected during this project, and additional projects being conducted in various aircraft by the Technical Center and other organizations, to develop MLS TERPS criteria.

During this flight test series, various approach and departure procedures were flown in the Technical Center's B-727 (N-40) to and from runway 13/31 at the Atlantic City International Airport (ACY). The departure procedures flown will be the subject of another report. A Bendix Basic Narrow MLS was used, along with a Bendix MLS receiver and precision distance measuring equipment (PDME) interrogator. Approach angles of 3°, 3° CAT-II, 3.5°, and 4° were used for both missed approaches and landings. Seventeen subject pilots from industry and government completed the entire flight test series, with three others flying partial missions. All flights had aircraft parameters recorded by an on-board data collection system, and were tracked throughout by ground based tracking systems.

The airborne and tracking data from each flight was checked for validity, merged, and gaps in the data were filled by either linear interpolation or a least-squares quadratic polynomial curve fitting routine. The data were partitioned into bins, and statistical calculations were performed. Plan, profile, composite, isoprobability and scatter plots were drawn. The processed data were delivered to AVN-210 for inclusion in the MLS TERPS criteria development data base.

INTRODUCTION

BACKGROUND AND OBJECTIVES.

As the implementation of the Microwave Landing System (MLS) approaches, the application of Instrument Landing System (ILS) Terminal Instrument Procedures (TERPS) criteria to MLS guided approaches and departures has become inadequate due to MLS's more extensive guidance capabilities. The Federal Aviation Administration (FAA) Technical Center's Engineering Division, ACT-100, was tasked by the Standards Development Branch, AVN-210, Aviation Standards National Field Office, through the Navigation and Landing Division, APM-400, with collecting and processing MLS TERPS flight test data in a Boeing-727 (B-727) heavy jet aircraft. AVN-210 will use the data collected during this project, and other projects being conducted in various aircraft by the Technical Center and other organizations, to develop an MLS TERPS criteria data base.

SYSTEM/EQUIPMENT DESCRIPTION

MLS AND PRECISION DISTANCE MEASURING EQUIMENT.

The "Basic Narrow" MLS used for this project was developed for the FAA by the Communications Division of the Bendix Corporation. It consists of azimuth and elevation subsystems in a noncollocated configuration. It provides proportional guidance through $\pm 40^{\circ}$ of azimuth and 0° to 15° in elevation in the Phase III signal format. An International Civilian Aviation Organization (ICAO) signal format MLS could not be procured in time for this phase of the project. The precision distance measuring equipment (PDME) ground station was developed for the FAA by Cardion, and was located near the MLS azimuth site. Aircraft guidance was provided by a Bendix Service Test and Evaluation Program (STEP) MLS receiver and a Bendix STEP PDME interrogator.

TEST AIRCRAFT.

The test aircraft was the Technical Center's B-727, registration N-40. This is a large commercial jet aircraft with a maximum gross weight of 160,000 pounds, a cruising speed of 350 knots, and approach speeds in the range of 130 to 140 knots. The aircraft is standard, except that the electrical system has been upgraded to handle the additional loads of project equipment. For project data collection purposes the aircraft's avionics were augmented with a Litton LTN-51 Inertial Navigation System (INS) a Collins ADC-80F Digital Air Data Computer (DADC), and a Bendix MLS receiver and PDME interrogator.

AIRBORNE DATA COLLECTION EQUIPMENT.

The airborne data collection system (figure 1) is controlled by a Norden PDP 11/34M ruggedized minicomputer. An ACT-140 developed aircraft systems coupler (ASC) retrieves analog, synchro, discrete, and serial digital aircraft sensor data along with time code generator data, and formats it in 16-bit parallel form for processing by the computer. The data were recorded on a Kennedy 9-track tape recorder five times per second. The parameters collected are listed in table 1.

AIRCRAFT TRACKING EQUIPMENT.

In order to assure continous tracking of the aircraft during all maneuvers, two different tracking systems were used: Extended Area Instrumentation Radar (EAIR) and a laser tracker.

The Technical Center's EAIR is a precision C-band instrumentation radar system that was designed to measure and record an aircraft's position in slant range and azimuth and elevation angles. In the primary tracking mode, EAIR has a maximum range of 100 nautical miles (nmi), and a minimum tracking distance of 1 nmi. This was the primary method of tracking the aircraft at distances of 5 nmi and greater from the ground point of intercept (GPI).

The pulsed infrared laser tracker is positioned approximately 0.5 mile north of runway 13/31. A mirrored retroreflector was mounted below the cockpit of the aircraft to return the laser beam. Slant range and azimuth and elevation angles were recorded as for EAIR. The laser tracker generally provided the more accurate tracking data at distances of 5 nmi or less from the GPI, and at these distances is preferred to EAIR data. Parallax corrections for MLS antenna and retroreflector locations were not made because of their relatively close proximity.

TEST LOCATION.

All procedure development and data collection flights were flown to and from runway 13/31 at the Atlantic City International Airport (ACY), which is located on the grounds of the FAA Technical Center, Egg Harbor Township, New Jersey.

PROCEDURE DEVELOPMENT AND EVALUATION

The procedures for this flight test series were developed by Mr. John Ryan, ACT-630, FAA Technical Center, and personnel from the Standards Development Branch, AVN-210, located at the FAA Aeronautical Center, Oklahoma City, OK. AVN-210 personnel were at the Technical Center during the procedure evaluation flights using N-40. The procedure evaluation flights were flown by Technical Center pilots to and from runway 13/31. Approach angles up to 5° were flown before the final determinations were made. After considering a number of factors including safety, minimum power settings to operate deicing equipment, and approaches during tailwinds, it was determined that the maximum operational elevation angle (MOEA) would be 4°. Since the shallowest approach angle would be 3°, it was obvious that the midpoint elevation angle should be 3.5°. At the

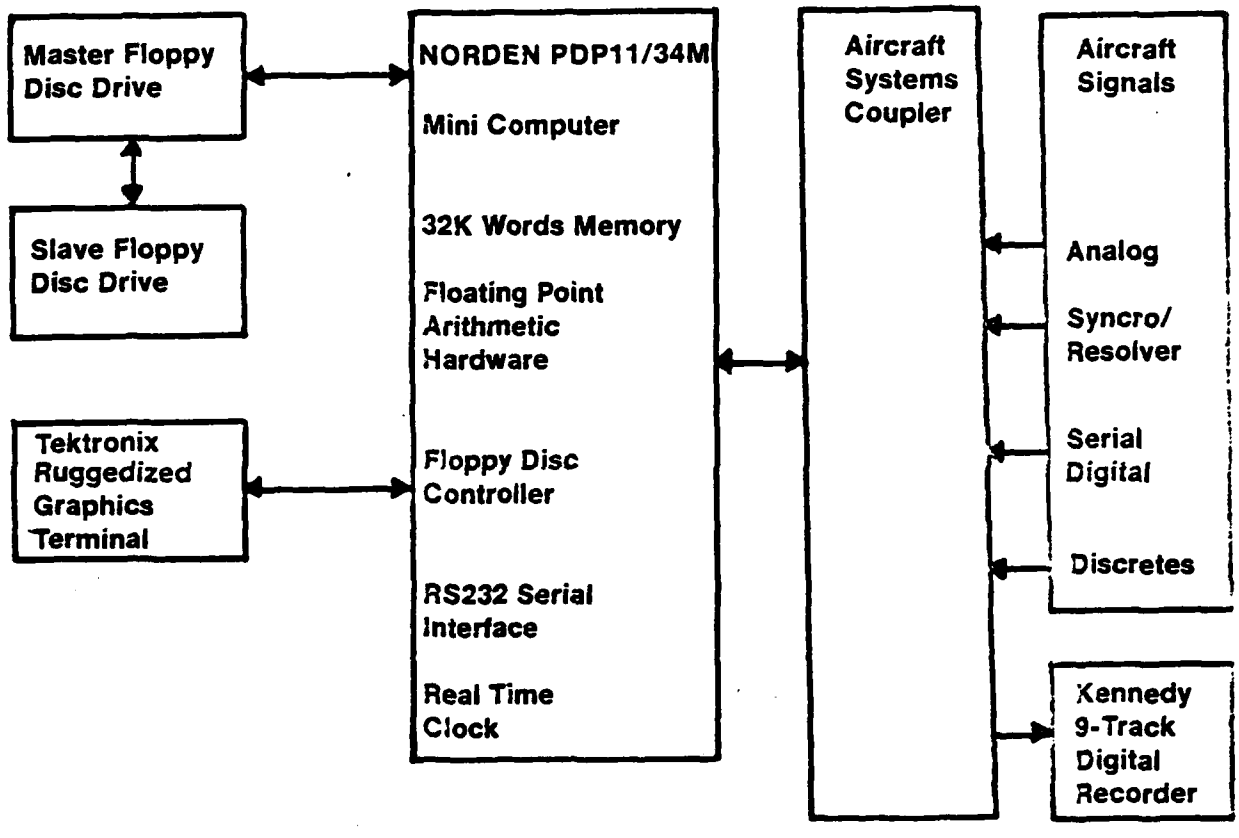

FIGURE 1. AIRBORNE DATA COLLECTION SYSTEM

TABLE 1. AIRBORNE DATA COLLECTION PARAMETERS

Parameter	Units	Resolution
Time	Hours, minutes, seconds, 1/10 second	0.1 sec
True airspeed (TAS)	Knots	1.0 knot
Vertical velocity	Feet/minute	20 ft/min
Aircraft heading	Degrees	1°
Barometric altitude (29.92)	Feet	1 foot
Radio altitude	Feet	1 foot
Vertical deviation (flight technical error (FTE))	Crosspointer deviation in millivolts (mV)	0.5 mV
Lateral deviation (FTE)	Crosspointer deviation (mV)	0.5 mV
MLS azimuth	Degrees	0.005°
MLS elevation	Degrees	0.005°
PDME	Nautical miles (nmi)	0.01 nmi
Pitch angle	Degrees	0.02°
Roll angle	Degrees	0.02°

same time, two departure procedures where evaluated. They will be discussed in the B-727 "Departures Data Report."

OPERATIONAL PROCEDURES

SUBJECT PILOT SELECTION.

The subject pilots for this flight test program were taken from the ranks of commercial airline pilots, except one who was an FAA aircraft certification pilot. In all, 20 subject pilots were used, with 17 completing the full set of runs, and 3 completing only a portion of the runs. All pilots were qualified B-727 captains, and had no previous experience flying MLS procedures.

SUBJECT PILOT BRIEFING.

When a subject pilot arrived at the Technical Center, he received a thorough briefing by one of the project safety pilots. Included in the briefing was an explanation of the operation of MLS, a review of aircraft operating procedures, and a review of the procedures to be flown. A sample of the information packet given to each subject is in appendix A.

DATA COLLECTION FLIGHTS.

In addition to the subject and safety pilots, each flight had a test conductor and a data collection technician on board. The test conductor recorded event mark times and other observations on a flight log (see appendix B), operated the MLS receiver control head, and ensured that the test flight was conducted according to plan. The data collection technician operated the data collection system and monitored all project equipment. The project safety pilot handled all communication with air traffic control (ATC) and the tracking facilities, monitored the subject pilot for safe operation of the aircraft, and operated the vision restricting goggles.

Instead of conventional vision restricting goggles or a hood, an electronically controlled set of instrument meteorological condition (IMC) simulation goggles were used. These goggles have the ability of simulating runway visual range (RVR) of 0 to 1 mile. They can also be instantly cleared to simulate breaking out of clouds. The goggles have a sensing switch that allows a portion of the goggles to be clear while the subject pilot is looking at the instruments, but causes the goggles to completely fog over if the subject lifts his head to look out of the cockpit. Since the goggles were operated by the safety pilot, the chances of cheating were reduced, and a more natural flight environment was presented. Therefore, the subject pilot was able to concentrate on flying the aircraft and not have to worry about removing a hood at decision height (DH). During the approach, the visibility was set to zero. When the subject pilot reached DH, the safety pilot simply cleared the glasses for a landing or kept them fogged for a missed approach. This was important since the subject pilot did not know if the procedure would terminate in a landing or a missed approach until reaching DH.

Each subject pilot flew 15 approaches. Nine resulted in missed approaches and six were flown to landing. In addition, six departures were flown and will be discussed in the B-727 Departures Data Report. The sequence of runs is listed in table 2.

TABLE 2. SEQUENCE OF APPROACHES AND DEPARTURES

Session 1	Session 2
1. Shuttle departure	11. Course reversal departure
2. 3° Missed approach	12. 4° Missed approach
3. 3.5° Missed approach	13. 3° Missed approach
4. 3° CAT-II Missed approach	14. 3.5° Missed approach
5. 4° Landing	15. 3° CAT-II Landing
6. Shuttle departure	16. Shuttle departure
7. 3.5° Missed approach	17. 3° Missed approach
8. 4° Missed approach	18. 4° Missed approach
9. 3° CAT-II Missed approach	19. 3° CAT-II Missed approach
10. Shuttle departure	20. 3.5° Landing

DATA PROCESSSING

FLIGHT TEST DATA.

Flight test data came from four sources: an airborne data tape, an EAIR tracking tape, a laser tracking tape, and observer flight logs. The airborne tape contained the aircraft parameters collected on board the aircraft during the data collection flights (table 1). The EAIR and Laser tracking tapes contained tracking data that had been converted from slant range, azimuth, and elevation to X, Y, and Z coordinates using the Technical Center coordinate system. During processing the origin of the tracking data was translated to the appropriate GPI for each glidescope angle. The observer flight logs contained the times for specific events during the procedures and any other pertinent information about the flight.

SUBJECT PILOT QUESTIONNAIRES.

At the conclusion of the second flight session, the subject pilot was given a questionnaire to fill out (see appendix C). These questionnaires asked the pilot his opinions on the flyability of each procedure. The completed questionnaires were forwarded to AVN-210 for tabulation and analysis.

PLAN AND PROFILE VALIDITY PLOTS.

For each approach, plan and profile view validity plots were generated (see appendix D). These plots depict vertical and lateral aircraft position and the corresponding azimuth and elevation crosspointer deviations, with respect to the intended path. The plots determined which runs contained valid data. Runs that had bad tracking data were incorrectly flown due to ATC instructions, or

were invalid for other reasons were eliminated from the statistics pool. The total number of runs flown and the number that were usable are shown in table 3.

MERGE.

In order to process data that came from three different sources, it was necessary to merge the data from the airborne, EAIR, and laser tapes into one file. When recorded, each record on each tape had been tagged with synchronized time. Thus, it was possible to merge the data from the three different tapes into one data file. The time on the airborne tape was considered the "master," and the data from the tracking tapes were aligned with the data from the airborne tape. A mode flag was created for each merged data file to indicate which tracking data sets were valid. Tracking data were considered invalid only if there were no data with the proper time tag.

TABLE 3. LIST OF USABLE RUNS

Total Number of Pilots:	20
Total Number of Approaches:	303
Number of Missed Approaches and Landings Providing Usable Data:	291
Number of Missed Approaches Providing Usable Data:	
3° Missed Approaches:	54
3° CAT-II Missed Approaches:	54
3.5° Missed Approaches:	56
4° Missed Approaches:	55
Total	219
Number of Landings Providing Usable Data:	
3° Landings:	18
3° CAT-II Landings:	18
3.5° Landings:	18
4° Landings:	18
Total	72

FILL.

Occasionally, gaps were present in both the airborne and tracking data. To provide as continuous a string of data as possible, two methods were used to fill in these gaps. If the gap consisted of only one missing record, linear interpolation was used to calculate the missing data. If the gap was between 2 and 20 records long, a least-squares, quadratic polynomial curve fitting routine was used. If the gap was greater than 20 records, the gap was too long for the filling routines and was left in the data base.

DATA PARTITIONING.

In order to compute the required statistics, it was necessary to partition, or bin, the data horizontally (perpendicular to the intended flight path) and vertically (parallel to the ground). For horizontal bins, the first bin (bin zero) is located along the system x-axis (runway centerline) at the point where a line dropped from the theoretical threshold crossing height (TCH), which is 50 feet above ground level (AGL), intersects the X-axis. Each subsequent bin was located at 50-meter intervals, with positive bins located on the approach

side of bin zero and negative bins located on the landing, or missed, approach side of bin zero. Additional bins were located at the following points:

1. Intermediate approach fix
2. Final approach fix
3. Missed approach point (DH)
4. Missed approach boundary

Vertical partitions were established for missed approach segments. The vertical bins were located at 10-meter intervals AGL while below DH (100 or 200 feet), and at 25-meter intervals AGL above DH to 2000 feet AGL.

STATISTICS.

Statistical calculations were performed on the data in each bin. The parameters calculated are in table 4.

To aid in the calculations for skewness and kurtosis, the first 4 moments about zero were calculated. The equations used to calculate the standard statistics and first 4 moments about zero are shown in table 5.

TABLE 4. STANDARD STATISTICS.

Parameter	Notation
Number of data points	N
Arithmetic mean	$\overline{X}$
Maximum value	X_{max}
Minimum value	X_{min}
Unbiased estimate of variance	S_u^2
Biased estimate of variance	S_b^2
Unbiased estimate of standard deviation	S_u
Biased estimate of standard deviation	S_b
Skewness	b_1
Kurtosis	b_2

RESULTS

STATISTICS PRINTOUTS AND TAPES.

The statistical data were delivered to AVN-210 in two different formats. A set of summary statistics and the minima analysis were printed to allow a quick overview of the statistical data. The full set of statistical data was recorded on magnetic tapes due to the extensive volume of paper that would be needed to print the complete set. Examples of the summary statistics printouts are provided in appendix E. The complete set of minima analysis printouts are provided in appendix F. The parameters for which statistics were calculated are listed by segment in tables 6, 7, and 8. The parameters for the minima analysis are listed in table 9.

TABLE 5. STANDARD STATISTICS EQUATIONS

Arithmetic Mean (first moment about zero): $\bar{x} = M_1 = \frac{\Sigma X}{N}$

Second Moment About Zero: $M_2 = \frac{\Sigma X^2}{N}$

Third Moment About Zero: $M_3 = \frac{\Sigma X^3}{N}$

Fourth Moment About Zero: $M_4 = \frac{\Sigma X^4}{N}$

Biased Estimate of Variance: $S_b^2 = M_2 - M_1^2$

Unbiased Estimate of Variance: $S_u^2 = \frac{(Sb^2)N}{N-1}$

Biased Estimate of Standard Deviation: $S_b = \sqrt{M_2 - M_1^2}$

Unbiased Estimate of Standard Deviation: $S_u = \sqrt{\frac{(Sb2)\ N}{N-1}}$

Skewness: $b_1 = \frac{M_3 - 3M_1M_2 + 2M_1^3}{(M_2 - M_1 2)1.5}$

Kurtosis: $b_2 = \frac{M_4 - 4M_1M_3 + 6M_1^2M_2 - 3M_1^4}{(M_2 - M_1^2)2}$

TABLE 6. PARAMETERS FOR STATISTICAL CALCULATIONS: INTERMEDIATE AND FINAL APPROACH SEGMENTS

Parameters for Statistics	Intermediate	Final
Crosstrack Position (feet)	Yes	Yes
Altitude (feet)	Yes	Yes
Azimuth TSE (degrees)	Yes	Yes
Azimuth TSE (feet)	Yes	Yes
Azimuth FTE (degrees)	Yes	Yes
Azimuth FTE (feet)	Yes	Yes
Azimuth FTE (% full scale)	Yes	Yes
Azimuth NSE (degrees)	Yes	Yes
Azimuth NSE (feet)	Yes	Yes
Elevation TSE (degrees)	-	Yes
Elevation TSE (feet)	-	Yes
Elevation FTE (degrees)	-	Yes
Elevation FTE (feet)	-	Yes
Elevation FTE (% full scale)	-	Yes
Elevation NSE (degrees)	-	Yes
Elevation NSE (feet)	-	Yes

TSE = Total System Error
NSE = Navigation System Error

TABLE 7. PARAMETERS FOR STATISTICAL CALCULATIONS: MISSED APPROACH SEGMENT LONGITUDINAL BINS

1. Crosstrack position (feet)
2. Altitude (feet)

TABLE 8. PARAMETERS FOR STATISTICAL CALCULATIONS: MISSED APPROACH SEGMENT VERTICAL BINS

1. Along track position (feet)
2. Altitude (feet)

TABLE 9. PARAMETERS FOR STATISTICAL CALCULATIONS: MISSED APPROACH SEGMENT MINIMA ANALYSIS

1. Altitude at DH (feet)
2. Along track deviation at DH (feet)
3. Crosstrack deviation at DH (feet)
4. Along track deviation at lowest altitude (feet)
5. Crosstrack deviation at lowest altitude (feet)
6. Lowest altitude (feet)
7. Height loss (feet)
8. Radio altimeter at DH (200 ft AGL (tracker))
9. Baro altimeter at DH (200 ft AGL (tracker))
10. Radio altimeter at lowest altitude
11. Baro altimeter at lowest altitude

COMPOSITE PLOTS.

To see how the subject pilots performed as a group, composite plots of each type of approach were produced and are shown in appendix G. These plots are an overlay of each of the individual plan and profile view validity plots and provide an indication of how much airspace needs to be protected for a particular procedure.

ISOPROBABILITY PLOTS.

A graphical presentation of the computed statistics was performed by the plotting of ±6 standard deviation isoprobability plots. The complete set of isoprobability plots is included in appendix H. Some of the final approach segment plots have a spike at 2 nmi from the GPI. This was caused by the switchover from EAIR to laser tracker at this point. This particular bin used both tracker's data to interpolate to this bin, which caused a larger than normal dispersion of data points than in the other bins. This caused a small deflection in plotting the mean, but was exagerated by the effects of plotting ±6 standard deviations.

LANDING SEGMENT SCATTER PLOTS.

Due to the relatively small number of landings performed during this flight test series, no statistical analysis was done on the landing segment data. However, landing segment scatter plots with a 95 percent error elipse on each plot were generated for both horizontal and vertical bins. Samples of the landing segment scatter plots are shown in appendix I.

DELIVERIES.

The following plots and processed data were shipped to AVN-210 on January 15, 1987:

1. All validity plots for missed approaches and landings.

2. All isoprobability plots for missed approaches and landings.

3. All composite plots for missed approaches and landings.

4. All summary statistics printouts for missed approaches and landings.

5. All minima analysis printouts for missed approaches.

6. Complete standard statistics on magnetic tapes for missed approaches and landings.

7. All landing segment scatter plots with 95% error ellipses.

The archival tapes will be delivered to AVN-210 after the approach data processing for all aircraft being flown at the Technical Center is completed.

APPENDIX A

SUBJECT PILOT INFORMATION PACKAGE

Project: Fixed Wing MLS Steep Angle Approaches for TERPS, T0603F

Task: MLS Steep Angle Approach Data Collection

Sponsor: FAA Navigation and Landing Branch, APM-410

Monitor: FAA Standards Development Branch, Aviation Standards National Field Office, AVN-210

Objective:

To provide flight data suitable for procedures specialists to develop criteria for MLS guided approaches and departures for heavy jet aircraft, and update Terminal Instrument Procedures (TERPS) for fixed wing aircraft.

Operational Areas Include

1. MLS Precision Approaches
2. Normal and Steep (3^{o} and greater) Approach Gradients
3. Height Loss at Missed Approach Point
4. MLS Azimuth Departures

Technical Issues

1. Pilot Workload
2. Aircraft Performance Limitations

Location

Federal Aviation Administration Technical Center
Atlantic City Airport, NJ 08405

Project Personnel

1. Mr. Bob Pursel, Manager
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   (609) 484-6466

5. Mr. David F. Reuter, Project Engineer
   MLS Fixed Wing Flight Test, ACT-140
   (609) 484-4614

ATTACHMENT #1

VOLUNTARY FAA EMPLOYEE

Background

In order to cover our legal obligations to you during your participation in this project, you will be required to complete a request for personnel action. Completion of said form will make you a WITHOUT COMPENSATION VOLUNTEER EMPLOYEE with the FAA Guidance and Airborne Systems Branch, ACT-140, Atlantic City, NJ without compensation during the term of involvement in this project, which is scheduled to be 3 days.

Employee Status

A WITHOUT COMPENSATION VOLUNTEER is NOT a Federal employee for any purposes other than injury compensation or laws related to the Torts Claims Act. Service is NOT creditable for leave accrual or any other employee benefits; however, travel orders will be issued to you, and thereby, provide a method to reimburse you for travel expenses as described in attachment #2.

Employee Duties

During your involvement in this project you will perform the duties of pilot for a Boeing 727 aircraft, including preflight planning, aircraft control, navigation, and communication. You will be assigned to perform the technical inflight evaluation of various guidance and airborne systems. You will normally be assigned to work between the hours of 8:00 am to 4:30 pm, however, not to exceed 8 hours in any day. You will be the pilot of the aircraft, however, the project pilot will be pilot-in-command at ALL times.

Qualifications

You will be required to meet the following minimum qualifications to participate in this project:

1. Hold a valid FAA Pilot Certificate with Instrument Multiengine and Boeing 727 type ratings.
2. Hold a valid FAA Medical Certificate.
3. Meet the recent flight experience as required by FAR 61.58.

Termination

Upon the expiration of the assignment your employment will be terminated with no further obligation to either party.

ATTACHMENT #2

TRAVEL EXPENSES

You will be reimbursed for normal travel expenses incurred while participating in this project. A U.S. Government travel voucher, Standard Form 1012, has been provided for you to record expenses and submit upon the completion of your participation in the program. The following is a list of important information to keep in mind while on government reimbursed travel.

1. Mileage for actual miles driven in your own car is reimbursed at 20.5¢ per mile.

2. Air travel (if necessary) should be via coach class, and at a discount or excursion fare, if available.

3. By Federal Law, the MAXIMUM ALLOWABLE AMOUNT you can be reimbursed for lodging and meals during any one day is $126.00. Of that amount, $33.00 is a flat reimbursement for meals and incidental expenses, except for the first day of travel, which is limited to $16.50. The remainder, $93.00, is a maximum amount reimbursable for lodging. All other reasonable expenses (car rental, airline tickets, tolls, etc.) are reimbursed at full rate.

4. All receipts for airline tickets, lodging, taxis, and tolls must be remitted with your travel voucher. Receipts for meals are not required.

5. Upon completion of the form, mail to the following address in the postage paid envelope provided for your convenience.

Edward Pugacz
FAA Technical Center
ACT-140
Atlantic City Airport, NJ 08405

ATTACHMENT #3

HOW TO FIND THE FAA TECHNICAL CENTER

- Take the ATLANTIC CITY EXPRESSWAY to EXIT 7S which is the GARDEN STATE PARKWAY.
- Take the GARDEN STATE PARKWAY to EXIT 37.
- Turn right and proceed approximately 1/4 mile to the first traffic circle, KEEP RIGHT and take the FIRST EXIT off the circle (ROUTE 563).
- Continue on ROUTE 563 (approximately 1 1/2 miles) to the traffic circle. Again keep right and the TECHNICAL CENTER entrance is the second exit off the circle.
- Proceed to the main gate and indicate that you have an appointment with Jim Enias, ACT-140, Building 301 (Hangar). Parking is across the road from the hangar.
- Once at the hangar, proceed across the hangar floor to the elevator and we are on the THIRD FLOOR, ROOM 305B.

HOW TO FIND THE PIER 4 HOTEL

- Take the GARDEN STATE PARKWAY to EXIT 30.
- When you leave the toll booth proceed straight ahead approximately 3/4 mile to the STOP sign. Proceed straight across that intersection to the Somers Point Circle. The PIER 4 will be directly off your right.
- Telephone (609) 927-9141

PIER 4 TO TECHNICAL CENTER

- Proceed back to the GARDEN STATE PARKWAY.
- Take the GARDEN STATE PARKWAY NORTH to EXIT 36.
- After you exit the Parkway TURN LEFT onto Route 563 and proceed under the Parkway to the first traffic light (approximately 1/4 mile) and TURN LEFT and follow the Route 563 signs.
- Proceed approximately 1/2 mile to the traffic circle, KEEP RIGHT and take the SECOND EXIT off the circle (Route 563).
- Continue on Route 563 (approximately 1 1/2 mile) to the traffic circle. Again keep right and the TECHNICAL CENTER entrance is the second exit off the circle.
- Proceed to the main gate and indicate that you have an appointment with Jim Enias, ACT-140, Building 301 (Hangar). Parking is across the road from the hangar.
- Once at the hangar, proceed across the hangar floor to the elevator and we are on the THIRD FLOOR, ROOM 305B.

ADMINISTRATIVE INFORMATION

NAME (Last, First, Middle)

_____

Street address or RFD no. (include apartment no., if any)

_____

City State Zip Code

_____

Birth Date Social Security Number

_____

Position and Current Employer

_____

Work Phone

_____

Flying Experience:

Military Experience: _____

_____

_____

_____

_____

Civilian Experience: _____

_____

_____

_____

_____

Other Flying Affiliates: _____

_____

_____

BOEING 727 MLS FLIGHT TEST PROGRAM

OPERATIONAL PILOT QUALIFICATIONS

NAME: _____

AFFILIATION: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: _____

FAA RATINGS: (Private, Comm, ATP, ETC)

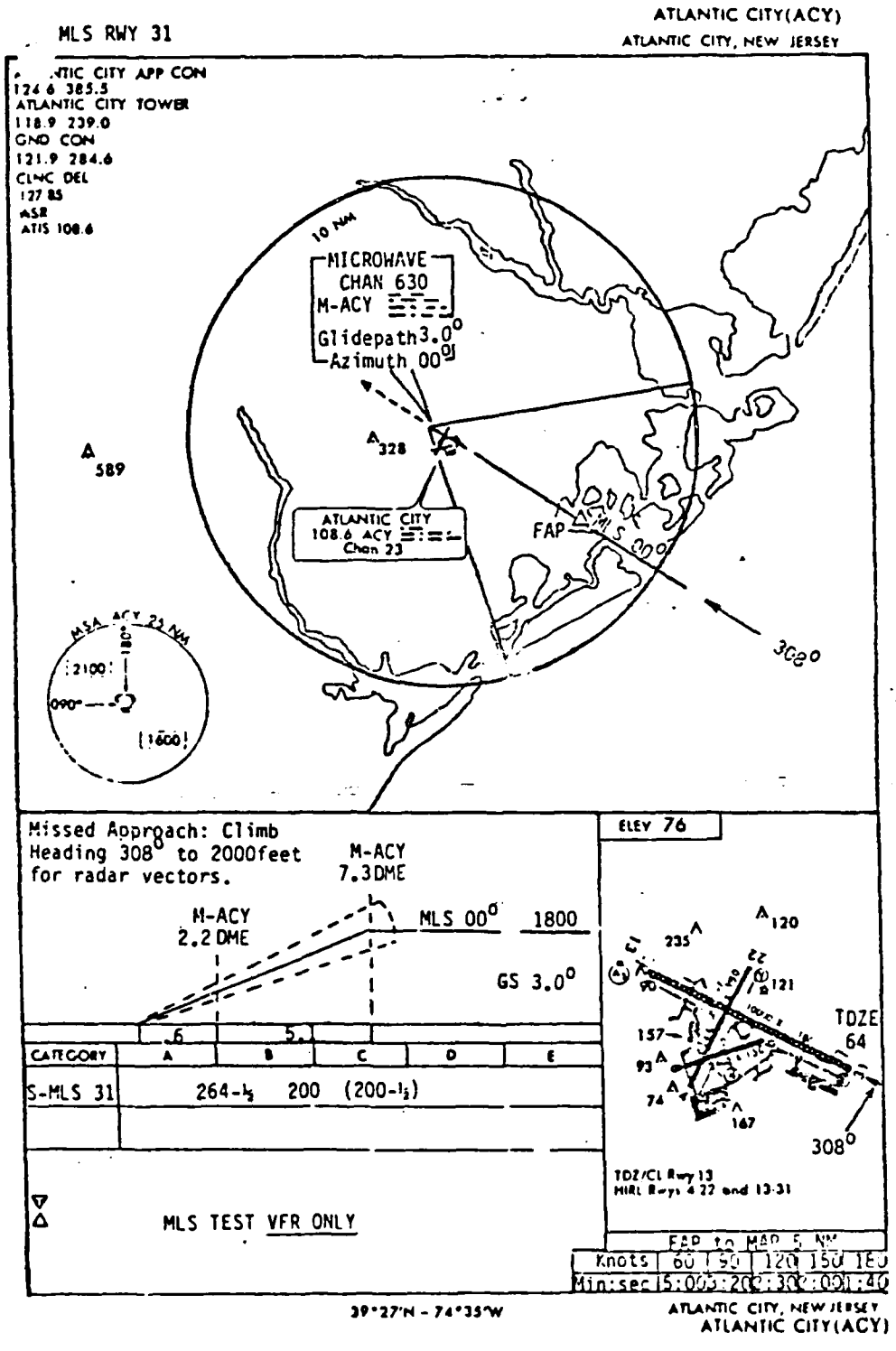
TOTAL FLIGHT HOURS: _____

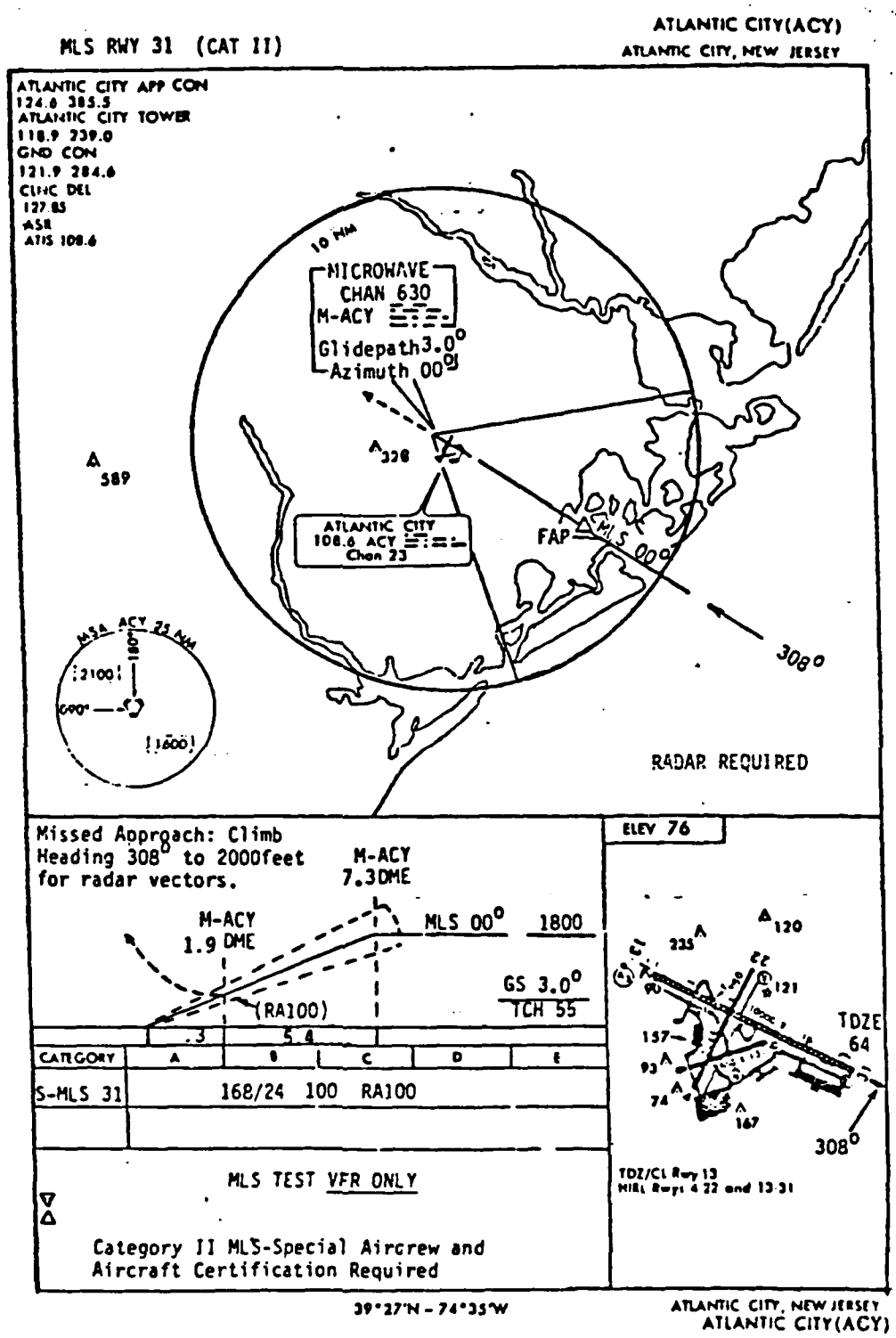
TOTAL BOEING 727 HOURS: _____

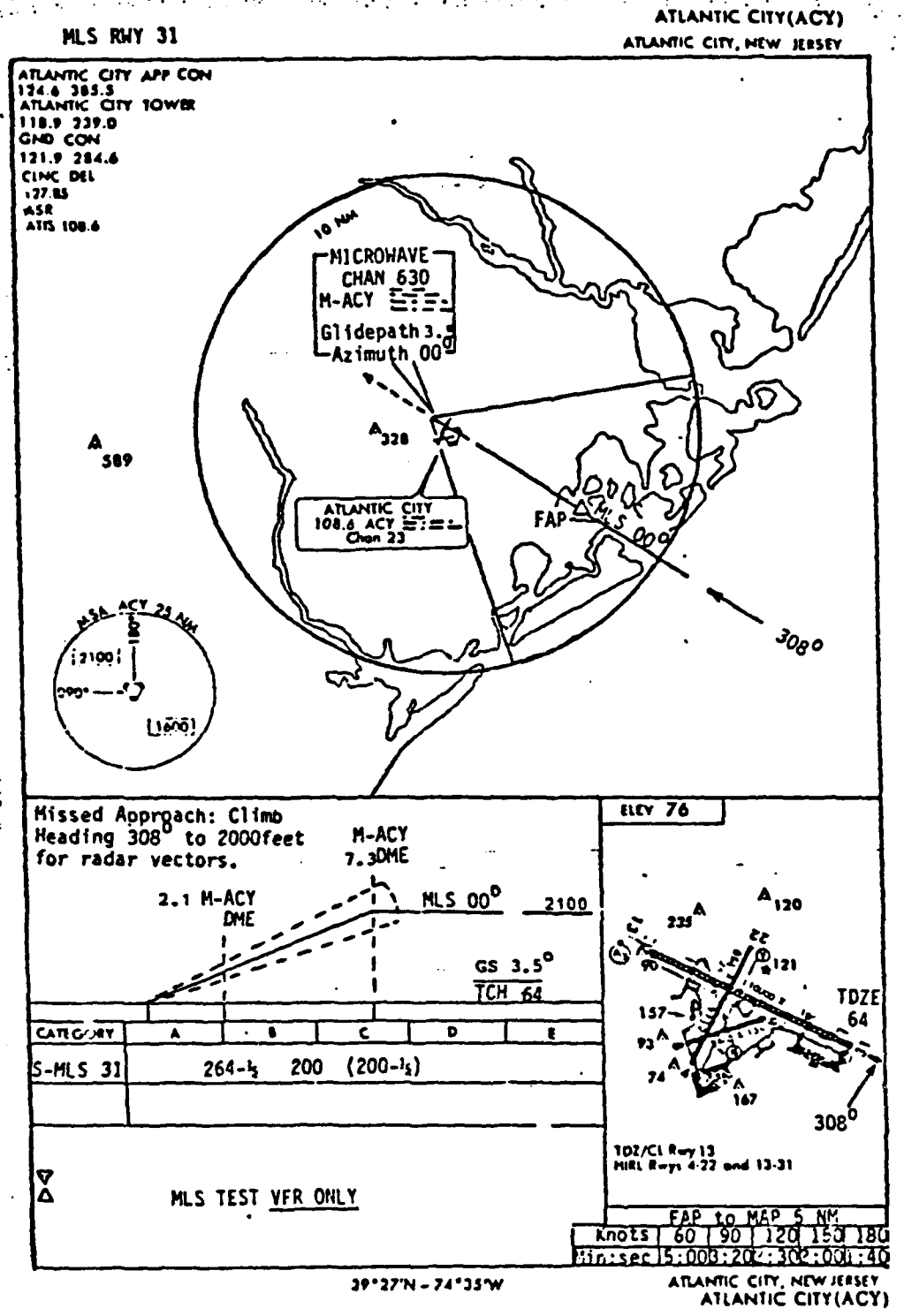
ACTUAL IFR HOURS: _____

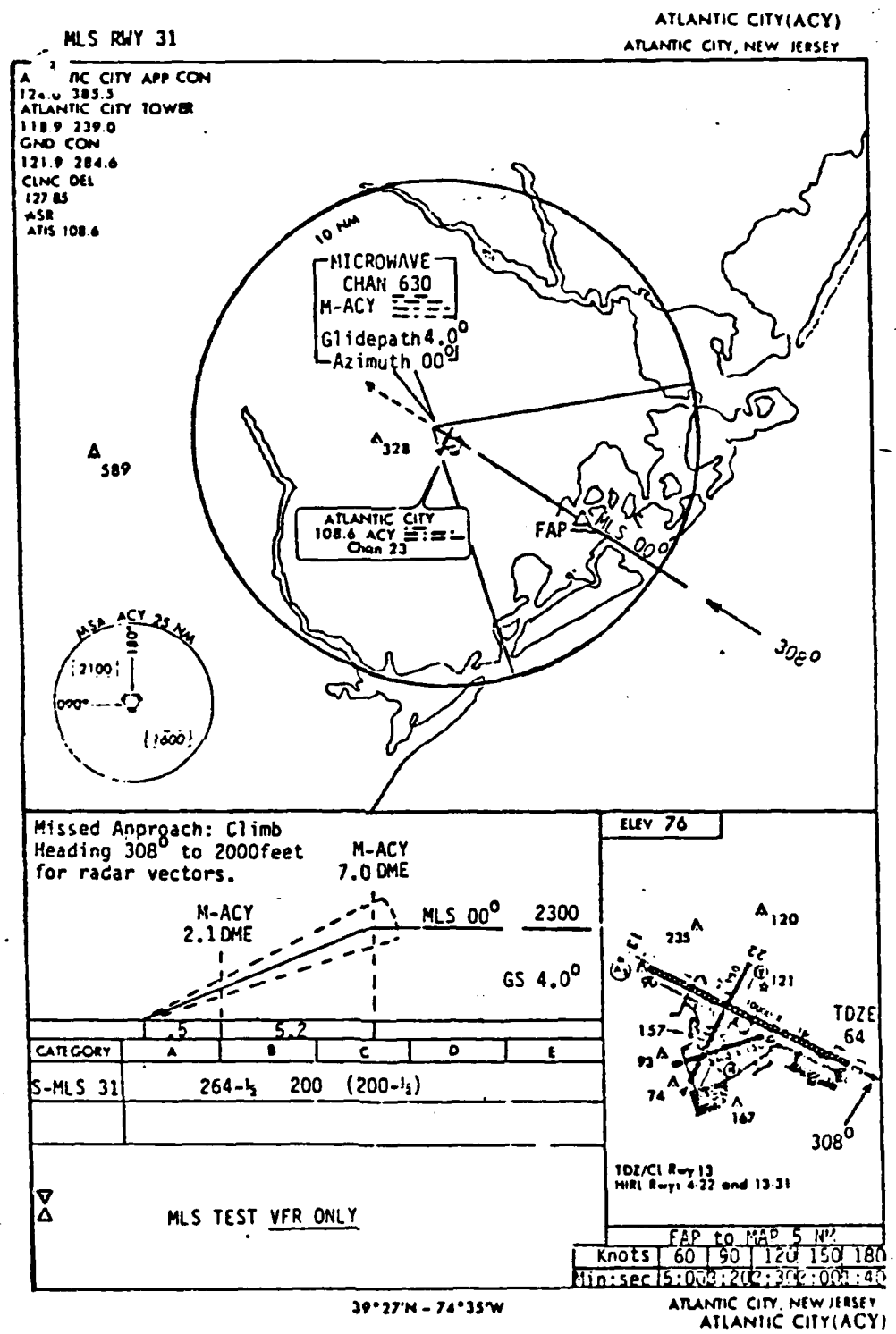
HOODED IFR HOURS: _____

PERIOD OF FAA FLIGHT TEST (week of): _____


ATLANTIC CITY(ACY)
ATLANTIC CITY, NEW JERSEY
MLS RWY 31
ATLANTIC CITY APP CON
124.6 385.5
ATLANTIC CITY TOWER
118.9 239.0
GND CON
121.9 284.6
CLNC DEL
127.85
ASR
ATIS 108.6
10 NM
MICROWAVE
CHAN 630
M-ACY
Glidepath 3.0°
Azimuth 00°
A 328
A 589
ATLANTIC CITY
108.6 ACY
Chan 23
FAP
3000
MSA ACY 25 NM
2100
090
1600
Missed Approach: Climb
Heading 308° to 2000feet
for radar vectors.
M-ACY
7.3DME
M-ACY
2.2 DME
MLS 00°
1800
GS 3.0°
.6
5.
CATEGORY
A
B
C
D
E
S-MLS 31
264-½
200
(200-½)
MLS TEST VFR ONLY
ELEV 76
A 120
235
121
157
93
74
167
TDZE
64
308°
TDZ/CL Rwy 13
HIRL Rwys 4-22 and 13-31
FAP to MAP 5 NM
Knots
60
90
120
150
180
Min:sec
5:00
3:20
2:30
2:00
1:40
39°27'N - 74°35'W
ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY(ACY)


MLS RWY 31 (CAT II)
ATLANTIC CITY(ACY)
ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY APP CON
124.6 385.5
ATLANTIC CITY TOWER
118.9 239.0
GND CON
121.9 284.6
CLNC DEL
127.85
ASR
ATIS 108.6
10 NM
MICROWAVE
CHAN 630
M-ACY
Glidepath 3.0°
Azimuth 00°
A 589
A 328
ATLANTIC CITY
108.6 ACY
Chan 23
FAP
MLS 00°
308°
MSA ACY 25 NM
180°
090°
2100
1600
RADAR REQUIRED
Missed Approach: Climb
Heading 308° to 2000feet
for radar vectors.
M-ACY
7.3DME
M-ACY
1.9 DME
MLS 00°
1800
GS 3.0°
TCH 55
(RA100)
.3
5.4
CATEGORY
A
B
C
D
E
S-MLS 31
168/24 100 RA100
MLS TEST VFR ONLY
Category II MLS-Special Aircrew and
Aircraft Certification Required
ELEV 76
A 120
235
121
157
93
74
167
TDZE
64
308°
TDZ/CL Rwy 13
HIRL Rwys 4 22 and 13 31
39°27'N - 74°35'W
ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY(ACY)

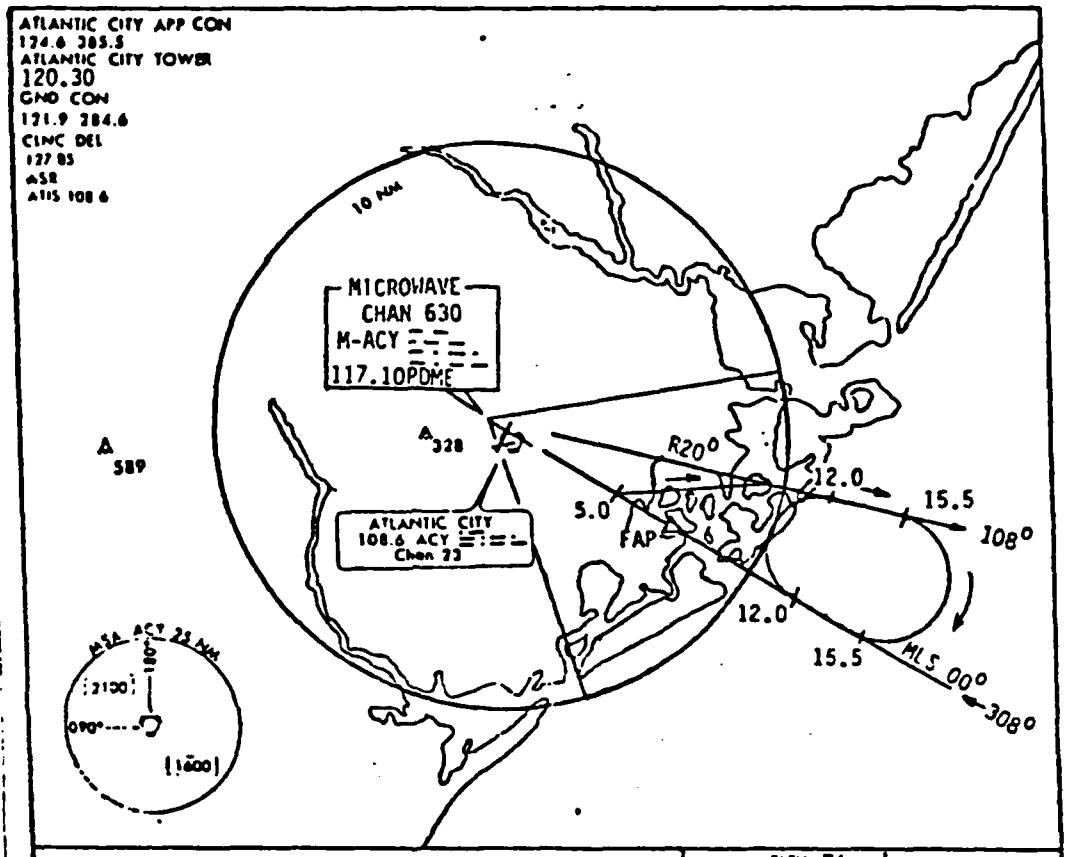

MLS RWY 31
ATLANTIC CITY(ACY)
ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY APP CON
124.6 385.5
ATLANTIC CITY TOWER
118.9 239.0
GND CON
121.9 284.6
CLNC DEL
127.85
ASR
ATIS 108.6
10 NM
MICROWAVE
CHAN 630
M-ACY
Glidepath 3.0°
Azimuth 00°
A 328
A 589
ATLANTIC CITY
108.6 ACY
Chan 23
FAP
MLS 00°
308°
MSA ACY 25 NM
090°
180°
270°
2100
1600
Missed Approach: Climb
Heading 308° to 2000feet
for radar vectors.
M-ACY
7.3DME
2.1 M-ACY
DME
MLS 00°
2100
GS 3.5°
TCH 64
CATEGORY
A
B
C
D
E
S-MLS 31
264-½ 200 (200-½)
MLS TEST VFR ONLY
ELEV 76
A 120
225
90
121
157
93
74
167
TDZE
64
308°
TDZ/CL Rwy 13
MIRL Rwys 4-22 and 13-31
FAP to MAP 5 NM
Knots 60 90 120 150 180
Min:sec 5:00 3:20 2:30 2:00 1:40
39°27'N - 74°35'W
ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY(ACY)


MLS RWY 31
ATLANTIC CITY(ACY)
ATLANTIC CITY, NEW JERSEY
A ATLANTIC CITY APP CON
120.0 385.5
ATLANTIC CITY TOWER
118.9 239.0
GND CON
121.9 284.6
CLNC DEL
127.85
ASR
ATIS 108.6
10 NM
MICROWAVE
CHAN 630
M-ACY
Glidepath 4.0°
Azimuth 00°
A 328
A 589
ATLANTIC CITY
108.6 ACY
Chan 23
FAP
MLS 00°
308°
MSA ACY 25 NM
180°
2100
090°
1600
Missed Approach: Climb
Heading 308° to 2000feet
for radar vectors.
M-ACY
7.0 DME
M-ACY
2.1 DME
MLS 00°
2300
GS 4.0°
.5
5.2
CATEGORY
A
B
C
D
E
S-MLS 31
264-½
200
(200-½)
MLS TEST VFR ONLY
ELEV 76
A 120
235
121
TDZE
64
157
93
74
167
308°
TDZ/CL Rwy 13
HIRL Rwys 4-22 and 13-31
FAP to MAP 5 NM
Knots
60
90
120
150
180
Min:sec
5:00
3:20
2:30
2:00
1:40
39°27'N - 74°35'W
ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY(ACY)

ATLANTIC CITY(ACY)

MLS SHUTTLE DEPARTURE(PILOT NAV)

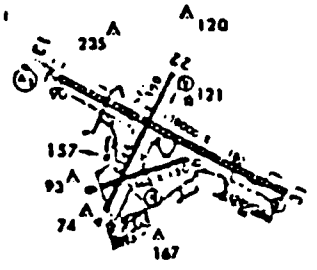
ATLANTIC CITY, NEW JERSEY



TAKE-OFF RUNWAY 13: Depart runway heading 128° and track outbound on the M-ACY 00° Azimuth, climb to 2000 feet before reaching the 6.0 PDME, maintain altitude or continue climb to assigned altitude. At the 5.0 PDME turn left to a heading of 078° and intercept the R20° Azimuth outbound, at the 15.5PDME hold as depicted or proceed inbound on the 00° Azimuth as directed by ATC.

Note: Holding Airspeed 230 Knots;
Inside Turn Bank Angle 20°
Outside Turn Bank Angle 16°,
in a no wind condition.

ELEV 76



TDZ/CL Rwy 13
MIRL Rwys 4-22 and 13-31

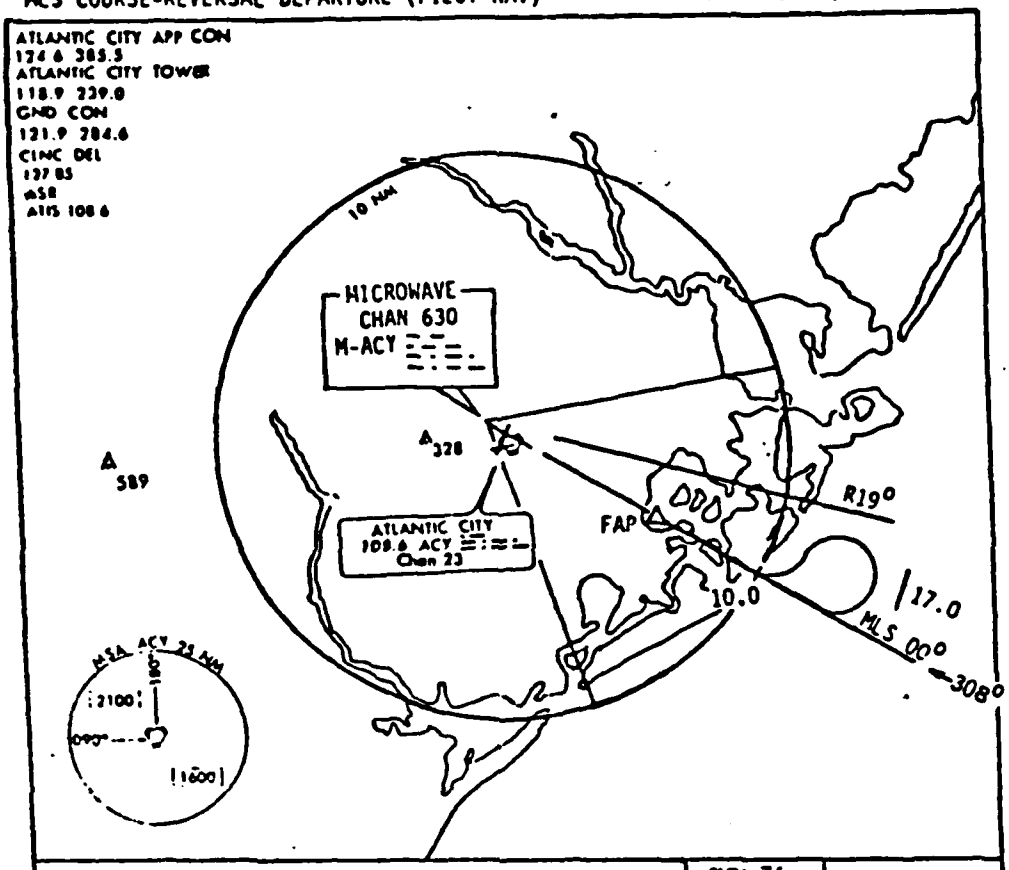
Knots	60	90	120	150	180
Min:Sec					

39°27'N - 74°35'W

ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY(ACY)

ATLANTIC CITY(ACY)
ATLANTIC CITY, NEW JERSEY

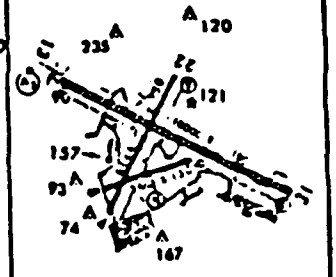
MLS COURSE-REVERSAL DEPARTURE (PILOT NAV)



TAKE-OFF RUNWAY 13: Depart runway heading 128° and track outbound on the M-ACY 00° Azimuth, climb to 2000 feet or as assigned. At the 10.0 PDME turn left 80°, upon completing the turn, turn right 260° to intercept the 00° Azimuth and track inbound. At no time during the manuever exceed the R19° Azimuth or the 17.0 PDME, adjust turn rate as necessary.

Note: Manuever Airspeed 230 Knots; Minimum Turn Bank Angle is 20° *in a No Wind Condition.*

ELEV 76



TDZ/CL Rwy 13
HIRL Rwys 4-22 and 13-31

Knots	60	90	120	150	180
Min Sec					

39°27'N - 74°35'W

ATLANTIC CITY, NEW JERSEY
ATLANTIC CITY(ACY)

APPENDIX B

FLIGHT LOGS

PILOTS:

MLS FIXED WING TERPS N 40

FLIGHT: MLS RECEIVER # CONTROL HEAD # DME # OBSERVERS:

DATE:

RUN #	TYPE	EVT #	EVENT TIME	CODE	EVT #	EVENT TIME	CODE	EVT #	EVENT TIME	CODE	WINDS & BARO	COMMENTS
1	SHUTTLE DEP.	1		1	4		4	7		7		
		2		2	5		5	8		8		
		3		3	6		6	9		9		
2	3°	10		10	13		13					GS @ 7.3 DME N. ON FINAL
		11		11								
		12		12								
3	3.5°	14		10	17		13					GS @ 7.3 DME N. ON FINAL
		15		11								
		16		12								
4	3° CAT II	18		10	21		13					GS @ 7.3 DME N. ON FINAL
		19		11								
		20		17								
5	4°	22		10	25		14					GS @ 7.0 DME N. ON FINAL
		23		11								
		24		12								
6	SHUTTLE DEP.	26		1	29		4	32		7		!
		27		2	30		5	33		8		
		28		3	31		6	34		9		
7	3.5°	35		10	38		13					GS @ 7.3 DME N. ON FINAL
		36		11								
		37		12								
8	4°	39		10	42		13					GS @ 7.0 DME N. ON FINAL
		40		11								
		41		12								
9	3° CAT II	43		10	46		13					GS @ 7.3 DME N. ON FINAL
		44		11								
		45		17								
10	3°	47		10	50		14					GS @ 7.3 DME N. ON FINAL
		48		11								
		49		12								

PILOTS:

FLIGHT: MLS RECEIVER # CONTROL HEAD # MLS FIXED WING TERPS N 40

DME # OBSERVERS:

DATE:

RUN #	TYPE	EVT #	EVENT TIME	CODE	EVT #	EVENT TIME	CODE	EVT #	EVENT TIME	CODE	WINDS & BARO	COMMENTS
11	COURSE REVERSAL	1		1								
		2		15								
		3		16								
12	4°	4		10	7		13					GS@7.0 DME N. on FINAL
		5		11								
		6		12								
13	3°	8		10	11		13					GS@7.3 DME N. on FINAL
		9		11								
		10		12								
14	3.5°	12		10	15		13					GS@7.3 DME
		13		11								
		14		12								
15	3° CAT II	16		10	19		14					GS@7.3 DME N. on FINAL
		17		11								
		18		17								
16	SHUTTLE DEPARTURE	20		1	23		4	26		7		!
		21		2	24		5	27		8		
		22		3	25		6	28		9		
17	3°	29		10	32		13					GS@7.3 DME N. on FINAL
		30		11								
		31		12								
18	4°	33		10	36		13					GS@7.0 DME N. on FINAL
		34		11								
		35		12								
19	3° CAT II	37		10	40		13					GS@7.3 DME N. on FINAL
		38		11								
		39		17								
20	3.5°	41		10	44		14					GS@7.3 DME N on FINAL
		42		11								
		43		12								

APPENDIX C

SUBJECT PILOT QUESTIONNAIRE

Pilot Questionnaire

Steep Angle Approach

Date_____ EL Angle_____
Pilot_____ Wind D/V_____

All questions relate to IMC MLS operational performance.

1. Was the EL angle:

Too shallow			About Right			Too steep
1	2	3	4	5	6	7

2. Could the EL angle be steeper? |_| yes |_| no

3. Indicate the difficulty experienced in intercepting and maintaining the glide path angle.

Very easy			About Right			Very difficult
1	2	3	4	5	6	7

4. Indicate the difficulty experienced in keeping the AZ needle centered in relation to the EL angle being used.

Very easy			About Right			Very difficult
1	2	3	4	5	6	7

5. Indicate your assessment of the stabilized power setting relative to operational procedures.

Too low			About Right			Too High
1	2	3	4	5	6	7

6. Compare the difficulty of visual transition and landing from a _____ angle to a normal 3 degree ILS:

Much less			Same			Much More
1	2	3	4	5	6	7

7. Compare the workload of a _____ GS to a normal 3 degree ILS.

Much Less			Same			Much More
1	2	3	4	5	6	7

8. Was the GS intercept distance from DH

Too Short			About Right			Too Long
1	2	3	4	5	6	7

9. What is your recommendation for the maximum allowable rate of descent:

_____ fpm.

10. What is your recommendation for a minimum at DH?

|_| 100 |_| 150 |_| 200 |_| 250 |_| 300 |_| Other

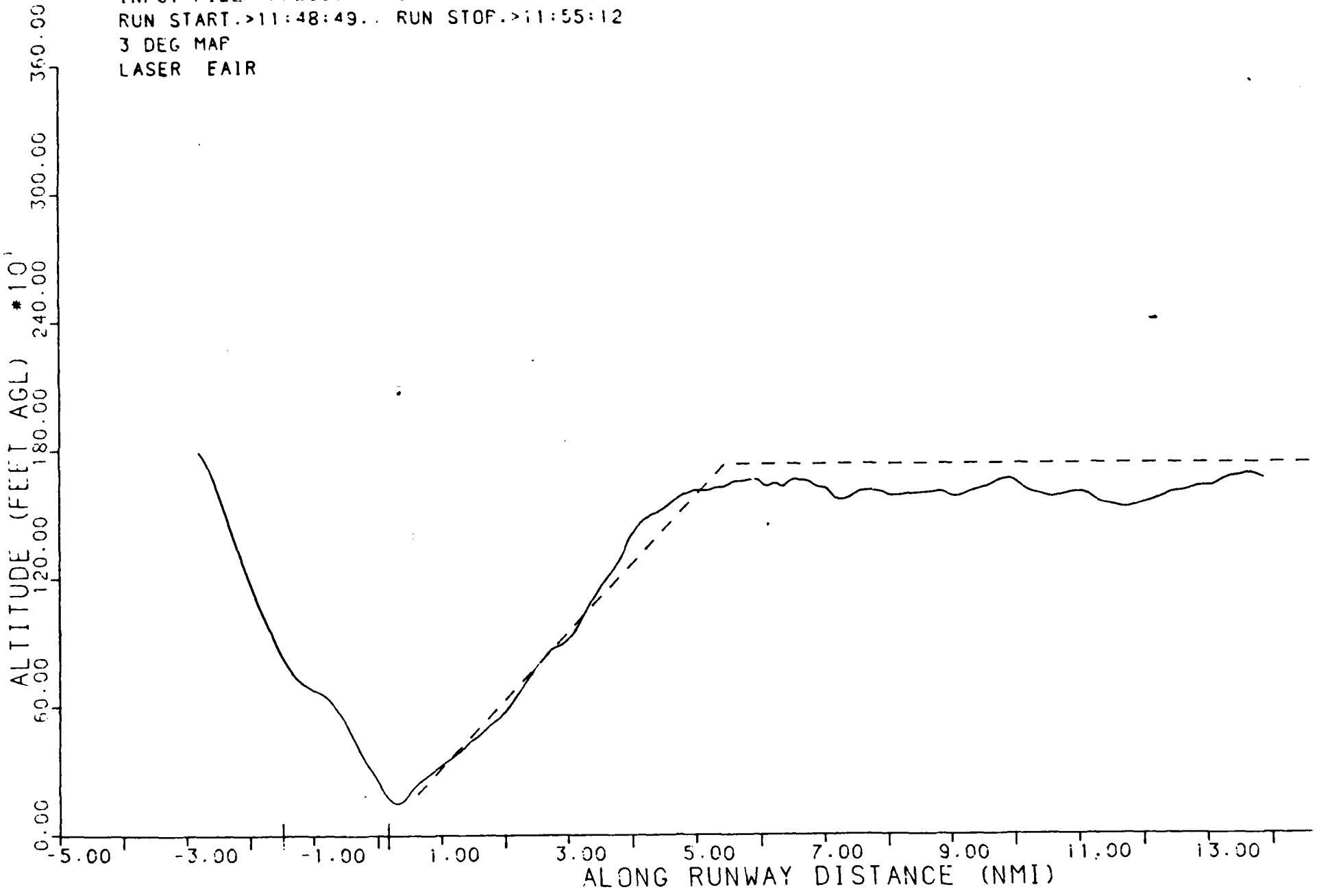
11. Was this DH satisfactory for the execution of a missed approach? _____

APPENDIX D

SAMPLE VALIDITY PLOTS

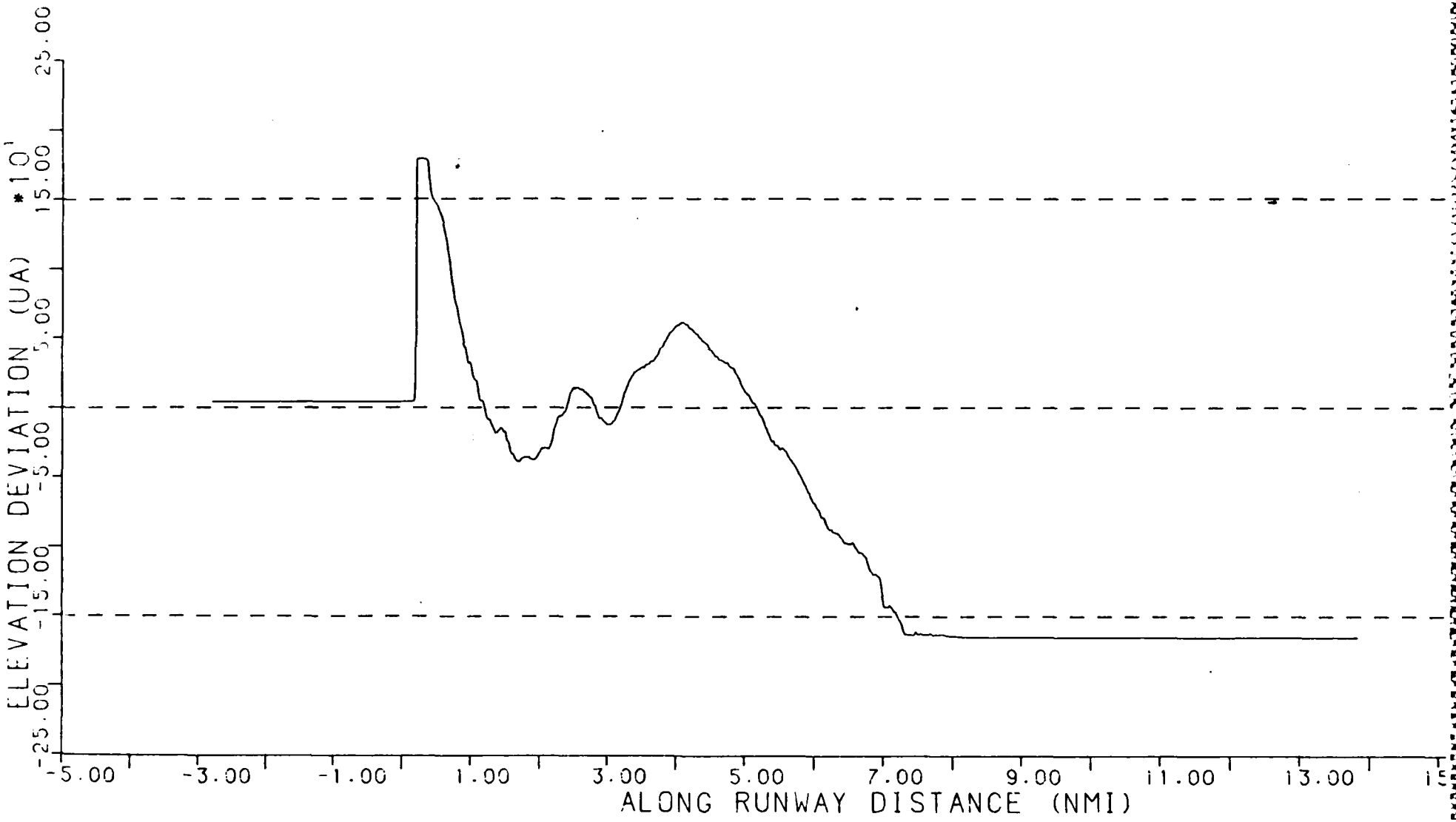
N-40 PILOTS:RYAN.FONTANA DATE: 2/14/86

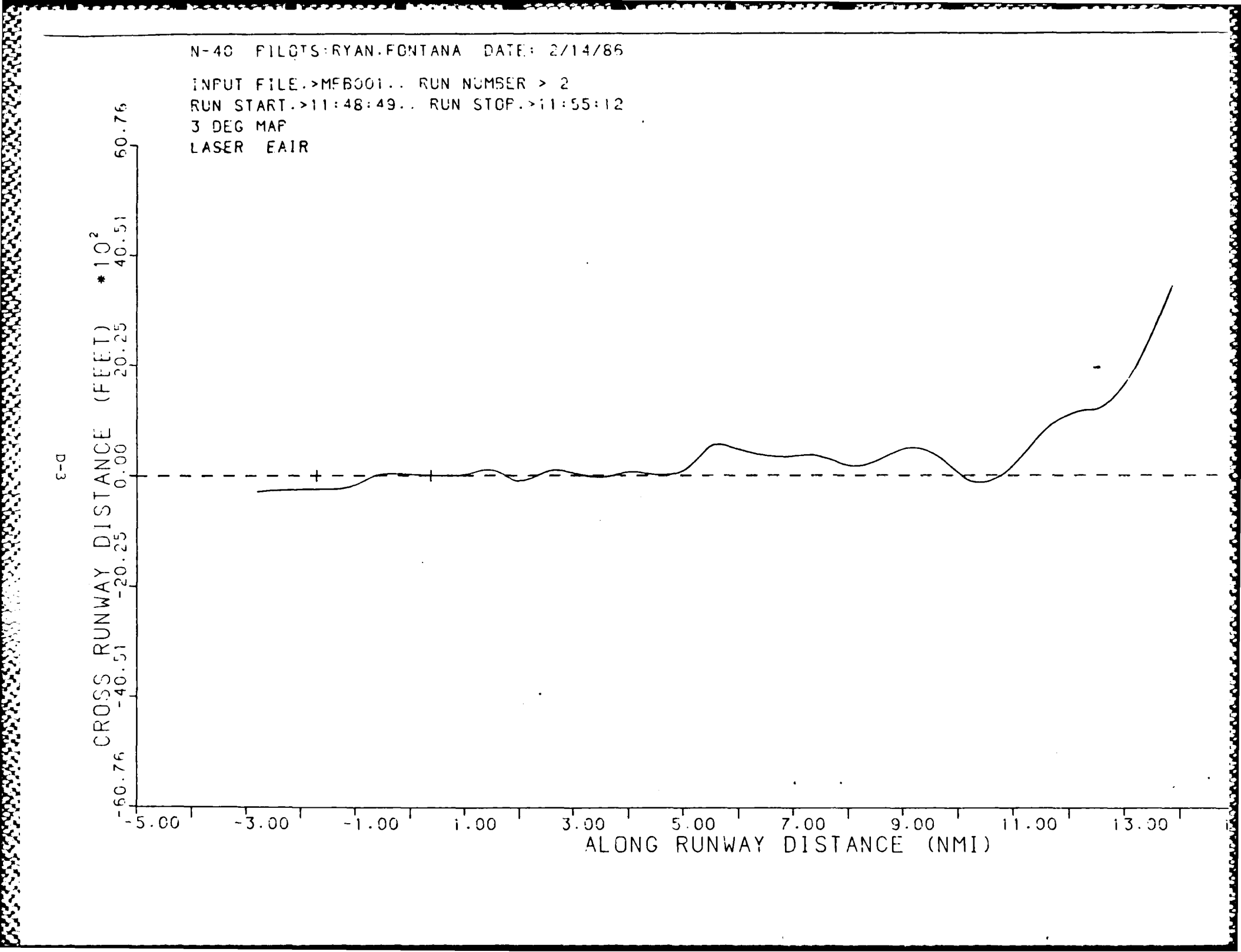
INPUT FILE.>MF6001...RUN NUMBER > 2
RUN START.>11:48:49.. RUN STOP.>11:55:12
3 DEG MAP
LASER EAIR



N-40 PILOTS:RYAN.FONTANA DATE: 2/14/86

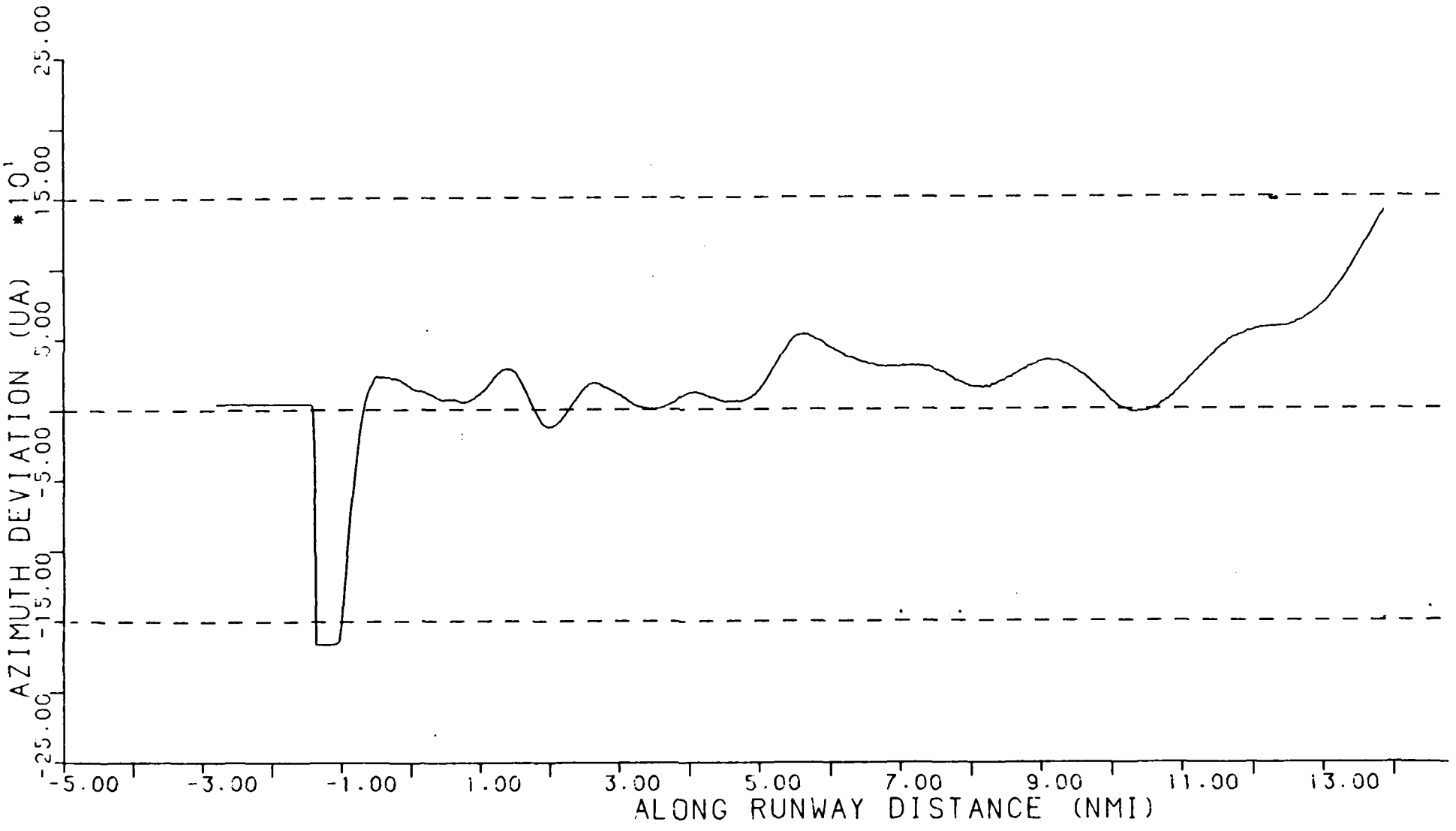
INPUT FILE.>MFB001.. RUN NUMBER > 2
RUN START.>11:48:49. RUN STOP.>11:55:12
3 DEG MAP




N-40 PILOTS:RYAN.FONTANA DATE: 2/14/86
INPUT FILE.>MFB001.. RUN NUMBER > 2
RUN START.>11:48:49.. RUN STOP.>11:55:12
3 DEG MAP
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)
B-3

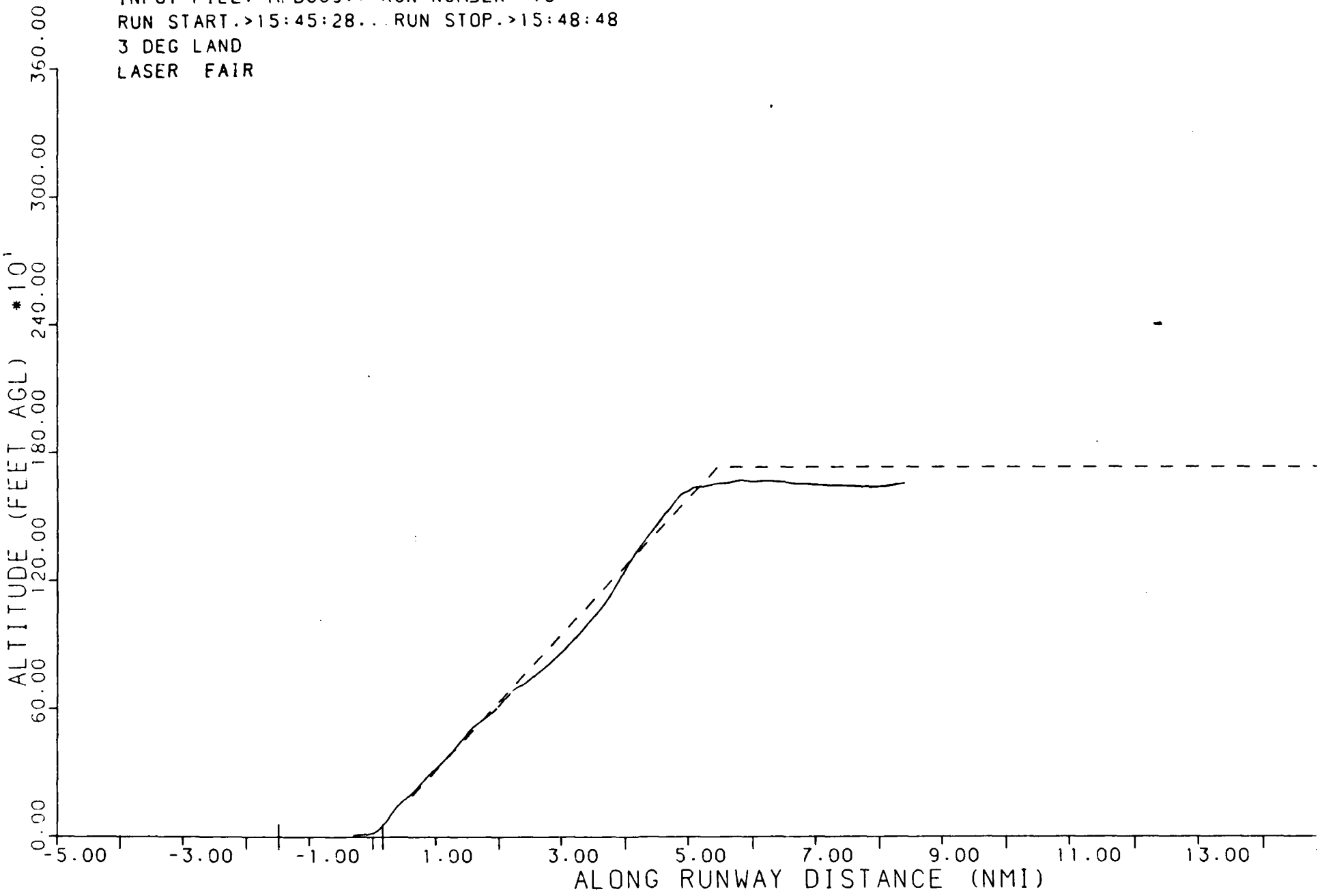
N-40 PILOTS:RYAN,FONTANA DATE: 2/14/86

INPUT FILE.>MFB001...RUN NUMBER > 2
RUN START.>11:48:49.. RUN STOP.>11:55:12
3 DEG MAP



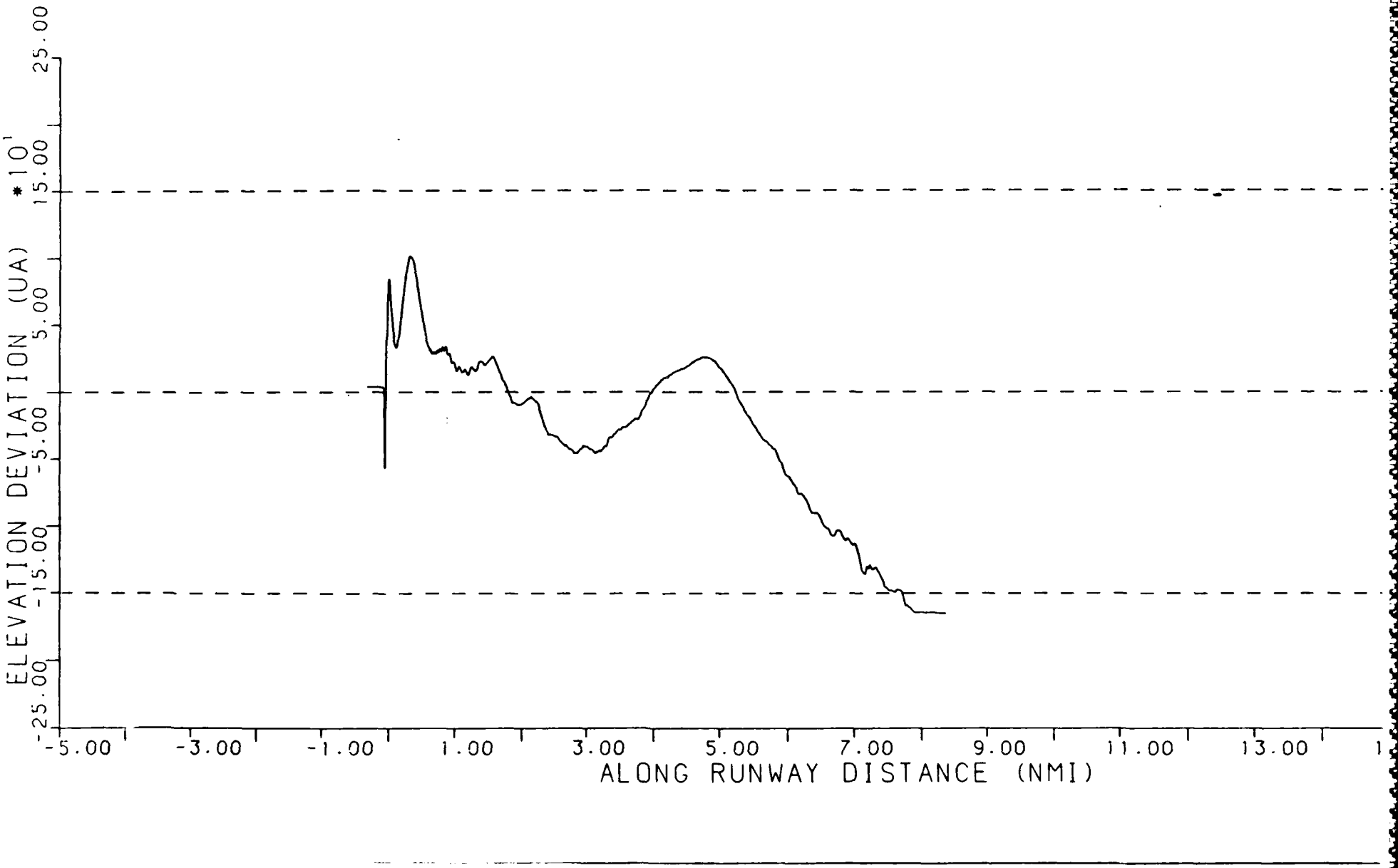
N-40 PILOTS:KREITZBERG/RYAN DATE:3/3/86

INPUT FILE.>MFB009.. RUN NUMBER >10
RUN START.>15:45:28.. RUN STOP.>15:48:48
3 DEG LAND
LASER FAIR



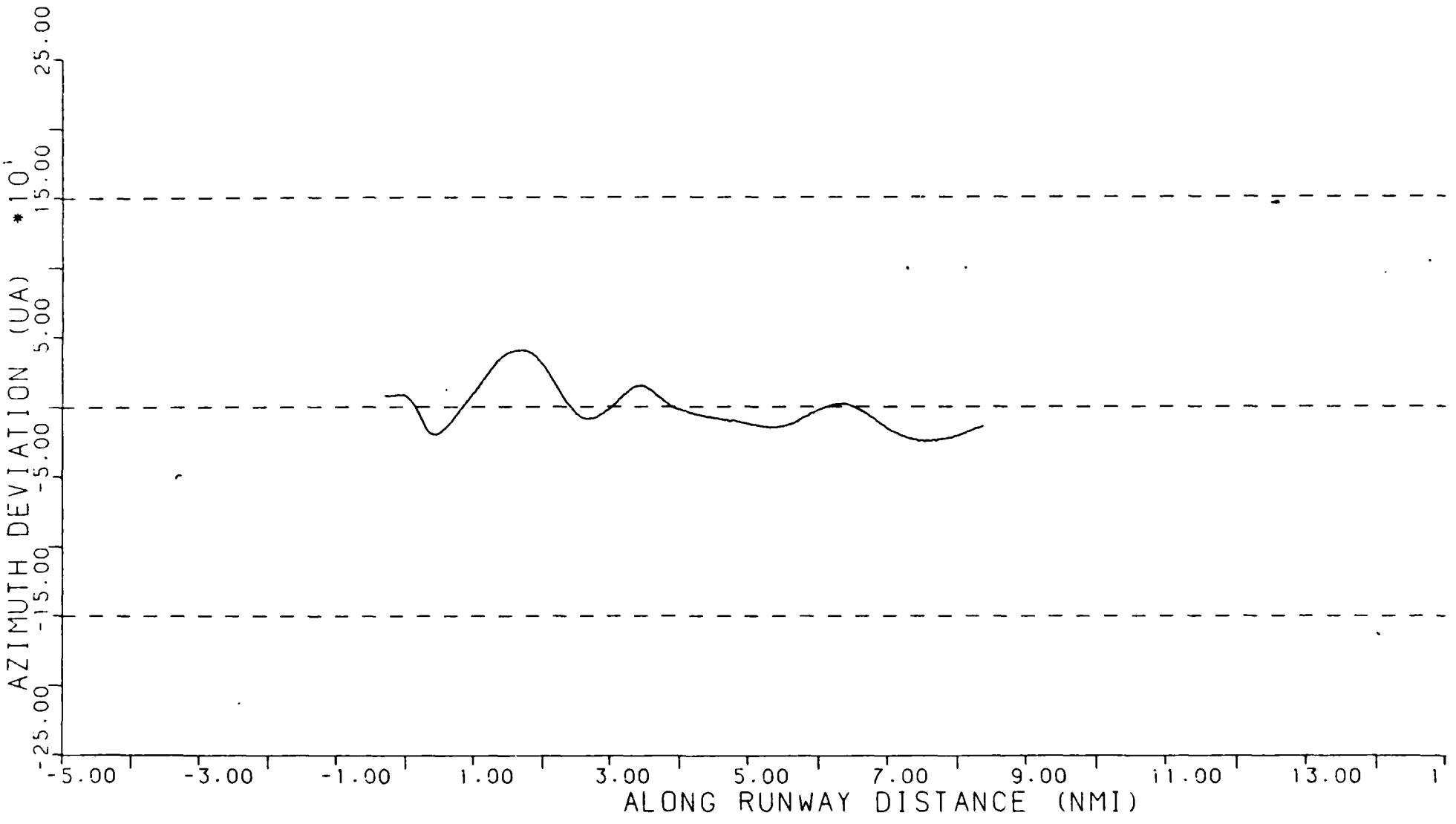
N-40 PILOTS:KREITZBERG/RYAN DATE:3/3/86

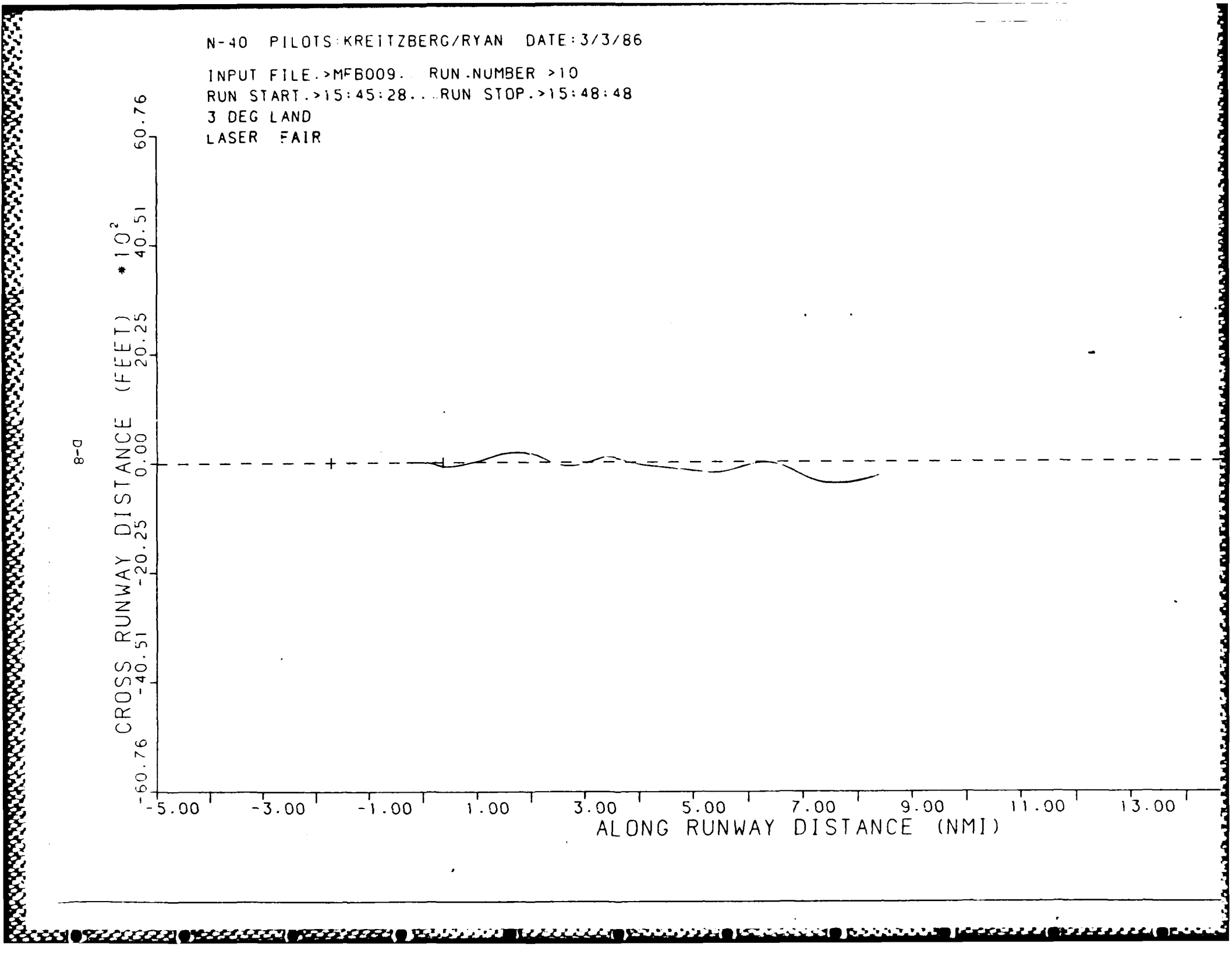
INPUT FILE.>MFB009.. RUN NUMBER >10
RUN START.>15:45:28.. RUN STOP.>15:48:48
3 DEG LAND



N-40 PILOTS:KREITZBERG/RYAN DATE:3/3/86

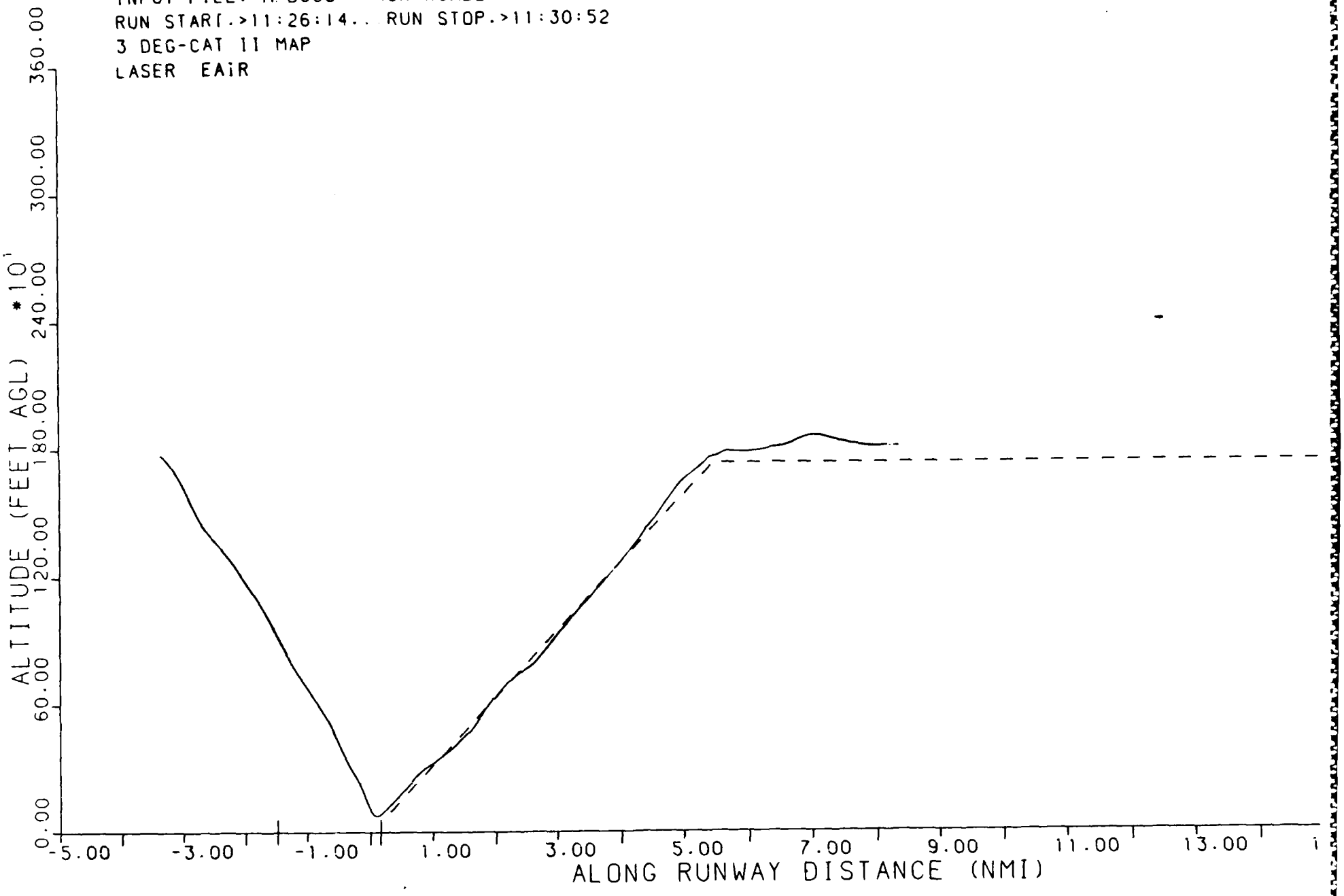
INPUT FILE.>MFB009. RUN NUMBER >10
RUN START.>15:45:28.. RUN STOP.>15:48:48
3 DEG LAND




N-40 PILOTS:KREITZBERG/RYAN DATE:3/3/86
INPUT FILE.>MFB009. RUN.NUMBER >10
RUN START.>15:45:28. . .RUN STOP.>15:48:48
3 DEG LAND
LASER FAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)
B-8

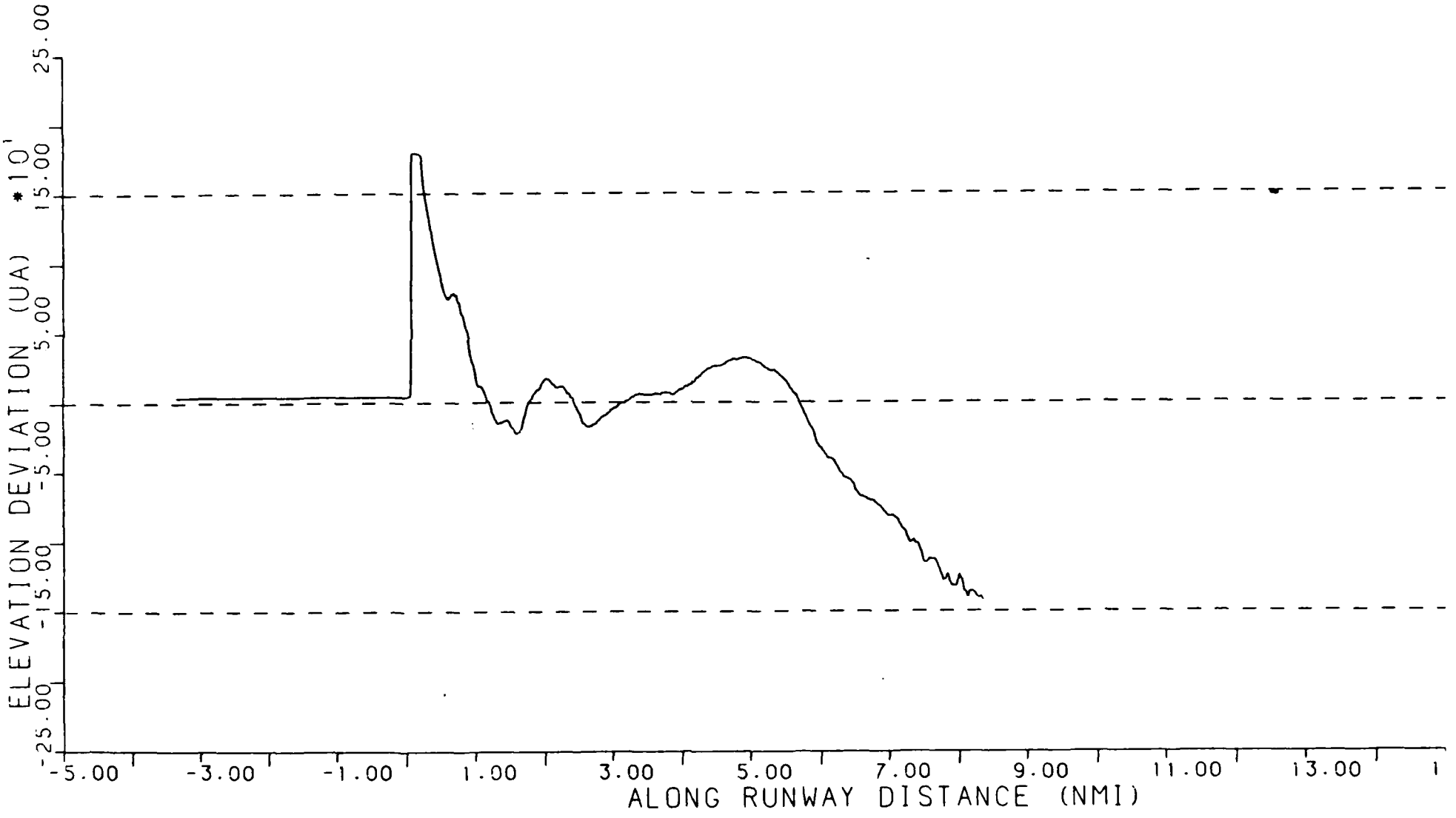
N-40 PILOTS: JOHNSON.RYAN DATE: 3/3/86

INPUT FILE.>MFB008.. RUN NUMBER > 9
RUN START.>11:26:14.. RUN STOP.>11:30:52
3 DEG-CAT II MAP
LASER EAIR



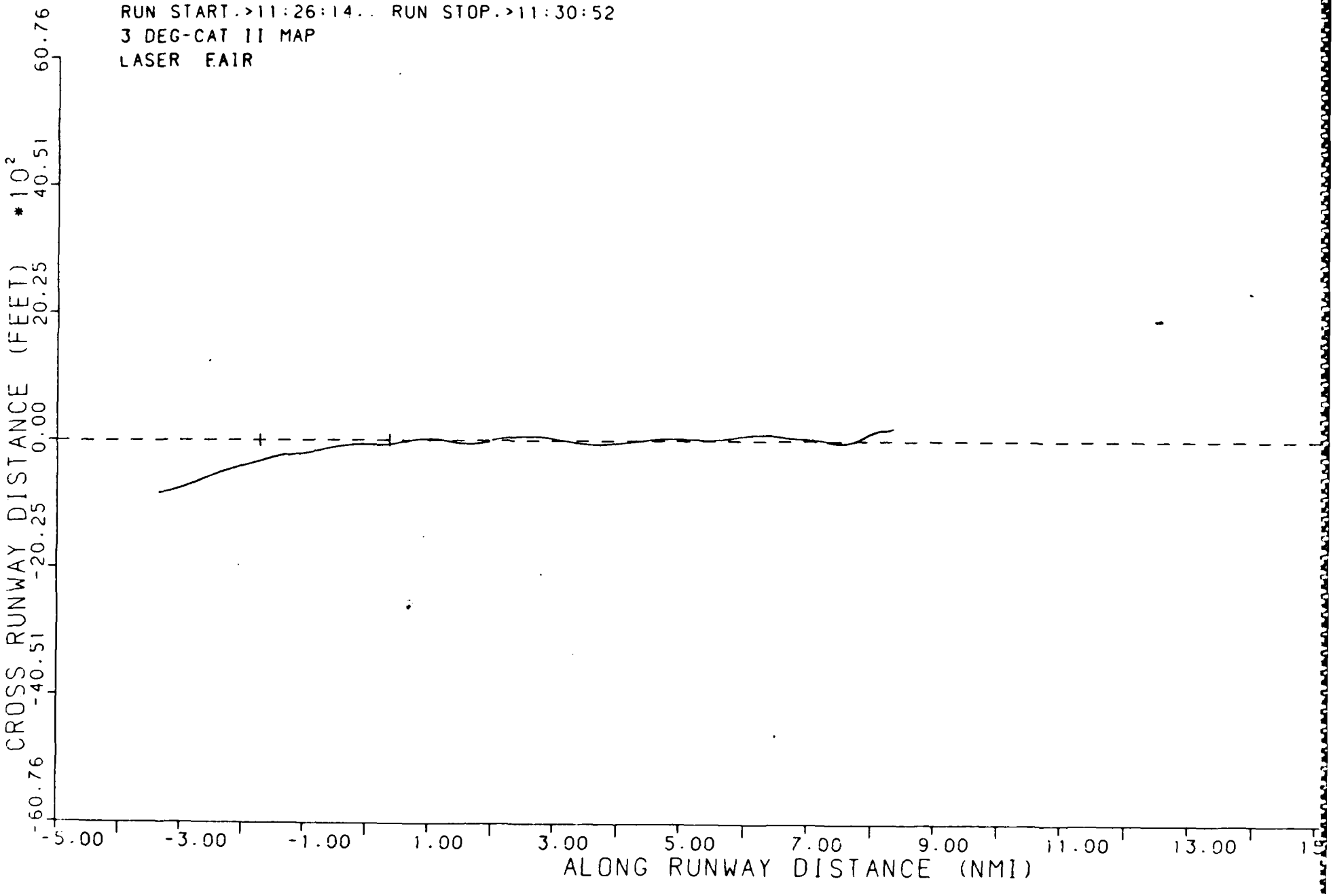
N-40 PILOTS: JOHNSON, RYAN DATE: 3/3/86

INPUT FILE.>MFB008.. RUN NUMBER > 9
RUN START.>11:26:14.. RUN STOP.>11:30:52
3 DEG-CAT II MAP



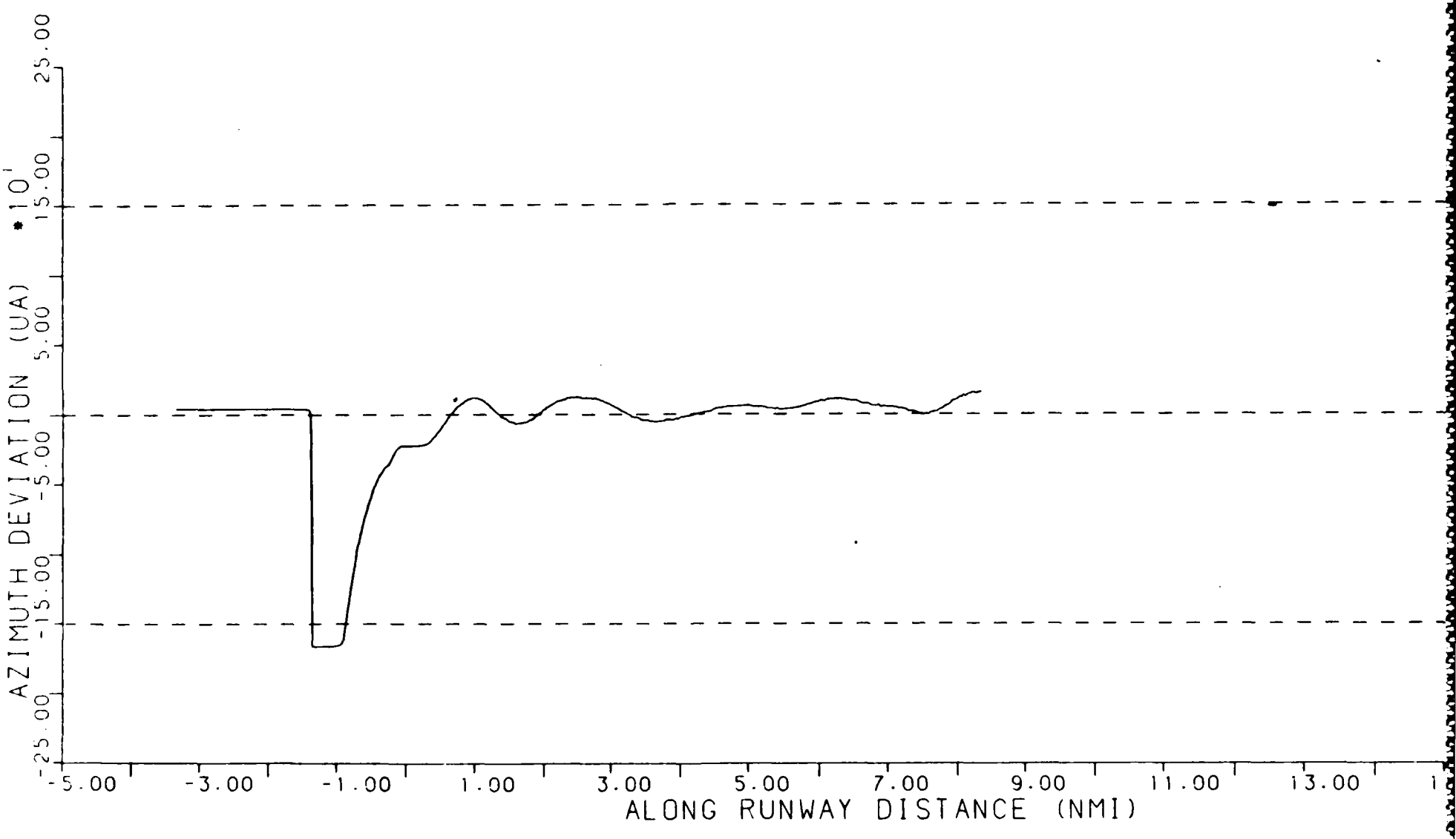
N-40 PILOTS: JOHNSON, RYAN DATE: 3/3/86

INPUT FILE.>MFB008.. RUN NUMBER > 9
RUN START.>11:26:14.. RUN STOP.>11:30:52
3 DEG-CAT II MAP
LASER FAIR



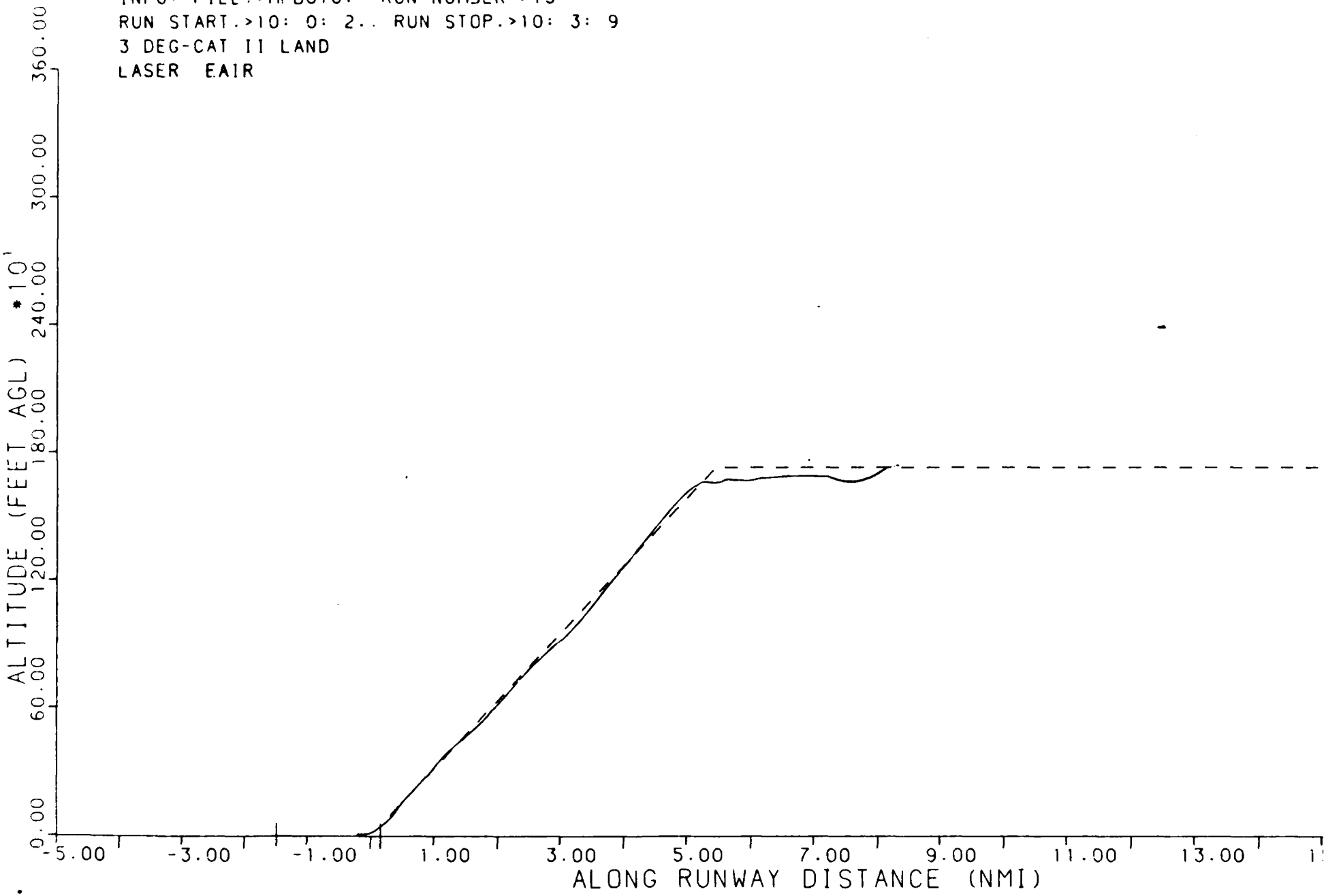
N-40 PILOTS: JOHNSON.RYAN DATE: 3/3/86

INPUT FILE.>MFB008. RUN NUMBER > 9
RUN START.>11:26:14. RUN STOP.>11:30:52
3 DEG-CAT II MAP



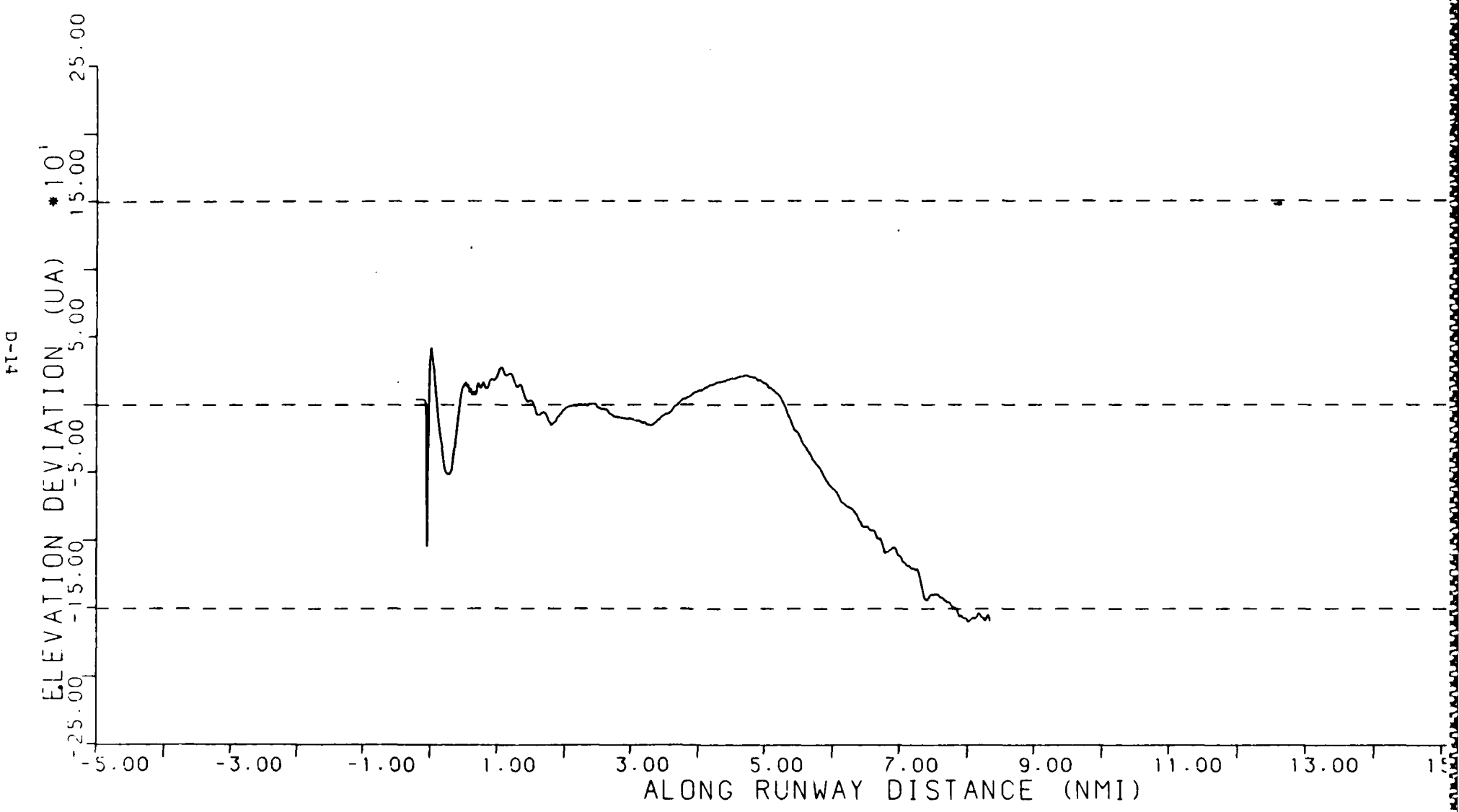
N-40 PILOTS:KREITZBERG,RYAN DATE:3/4/86

INPUT FILE.>MFB010. RUN NUMBER >15
RUN START.>10: 0: 2.. RUN STOP.>10: 3: 9
3 DEG-CAT II LAND
LASER EAIR



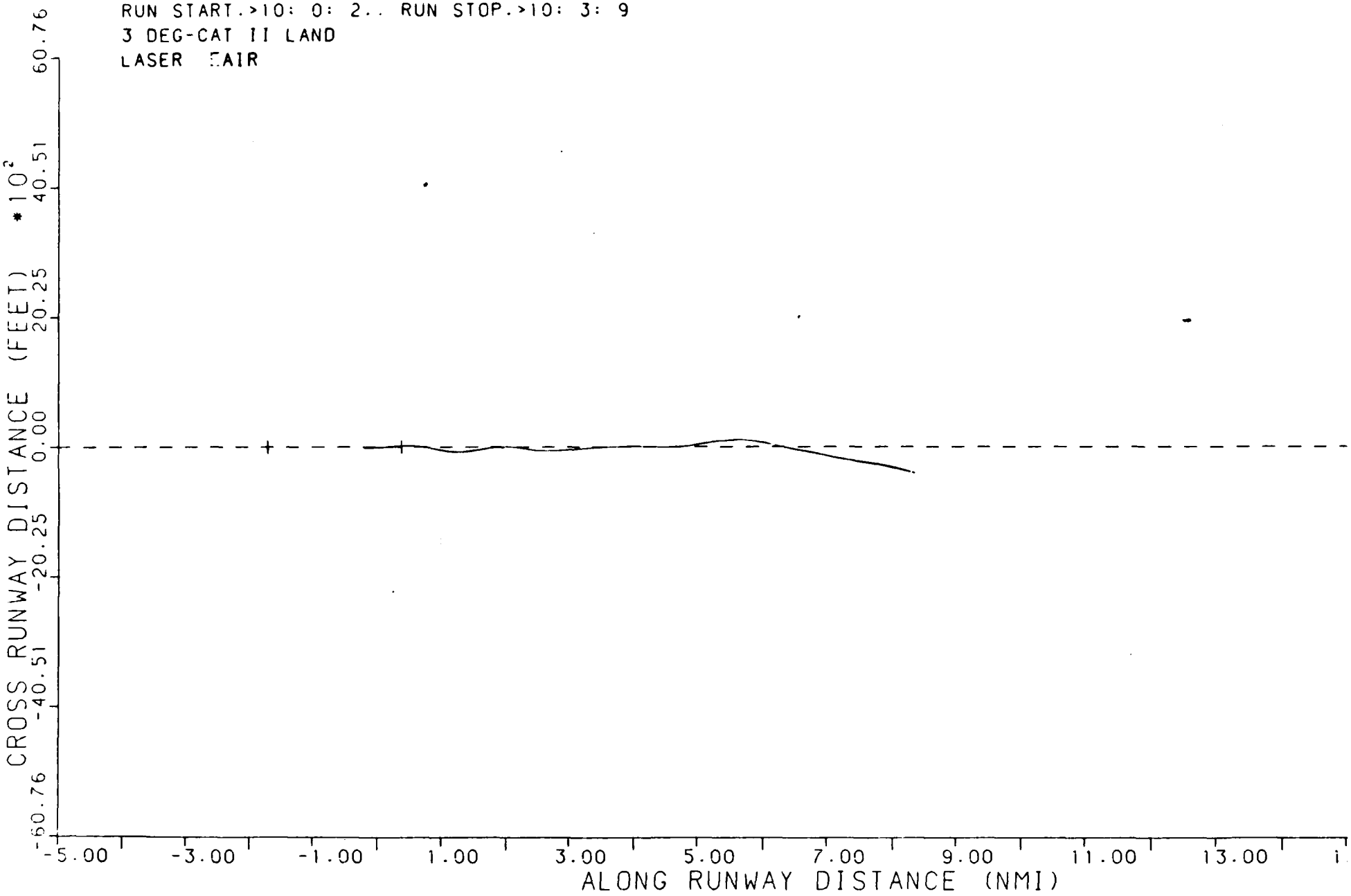
N-40 PILOTS:KREITZBERG,RYAN DATE:3/4/86

INPUT FILE.>MFB010.. RUN NUMBER >15
RUN START.>10: 0: 2.. RUN STOP.>10: 3: 9
3 DEG-CAT II LAND



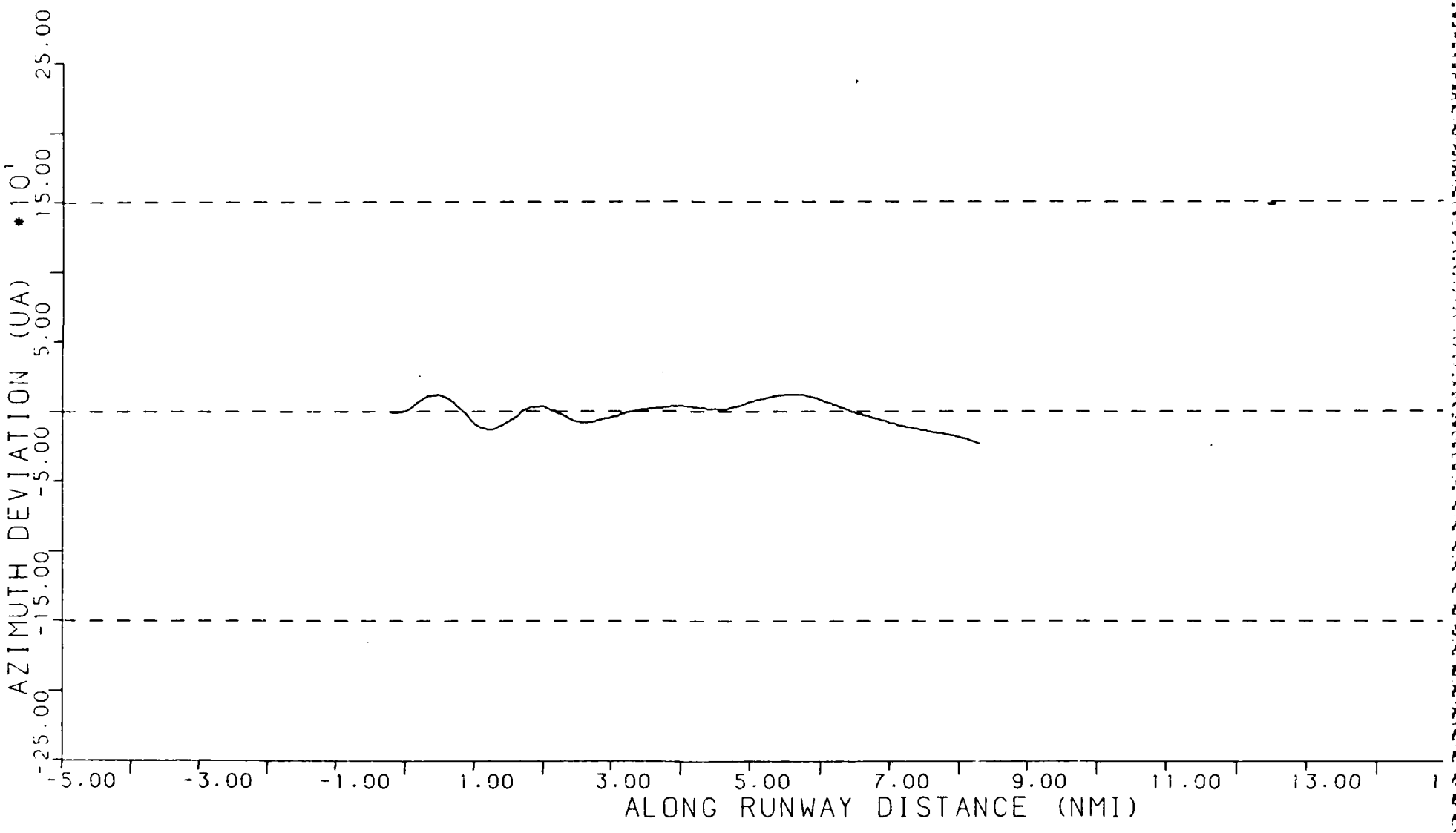
N-40 PILOTS:KREITZBERG,RYAN DATE:3/4/86

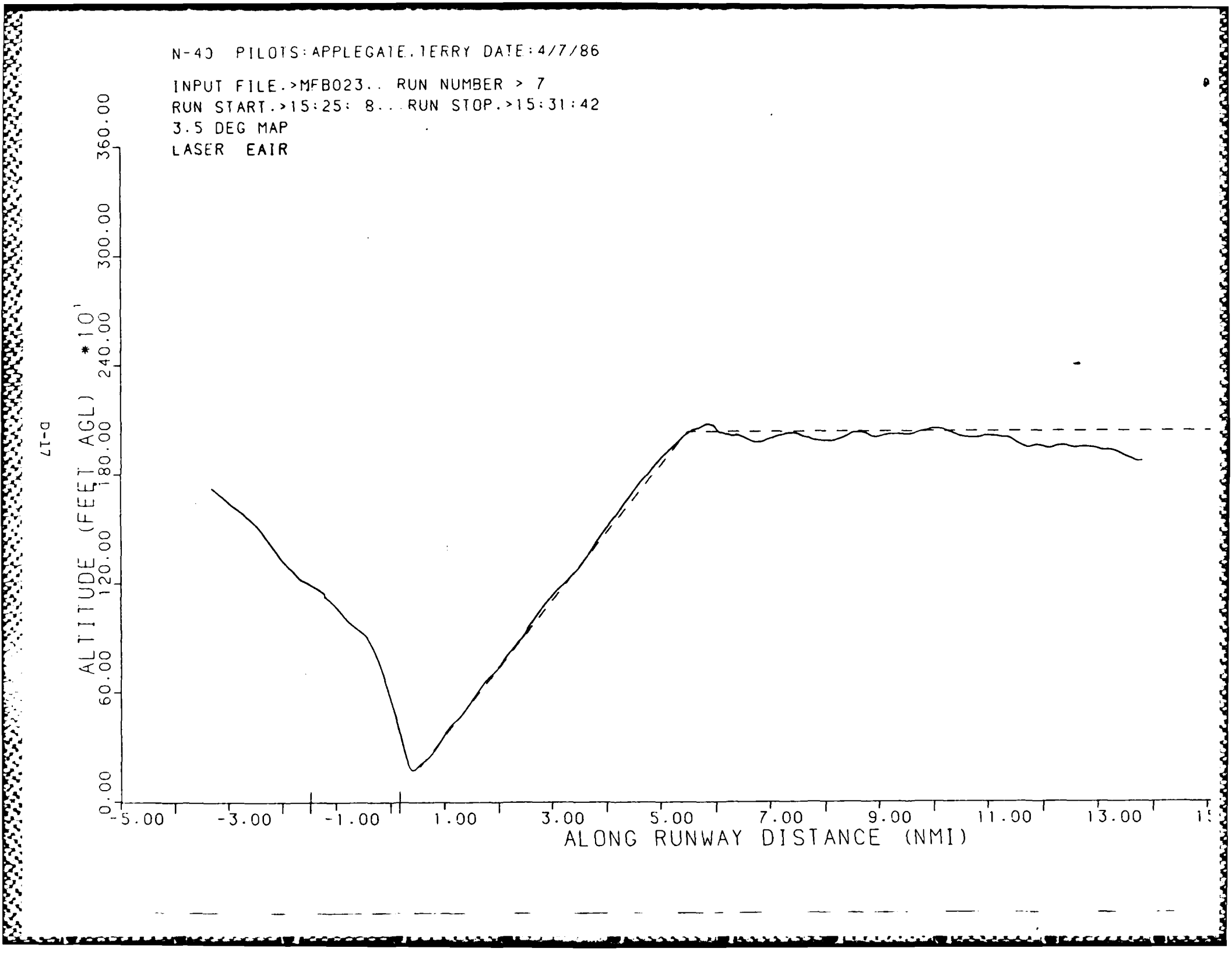
INPUT FILE.>MFB010.. RUN NUMBER >15
RUN START.>10: 0: 2.. RUN STOP.>10: 3: 9
3 DEG-CAT II LAND
LASER FAIR



N-40 PILOTS:KREITZBERG.RYAN DATE:3/4/86

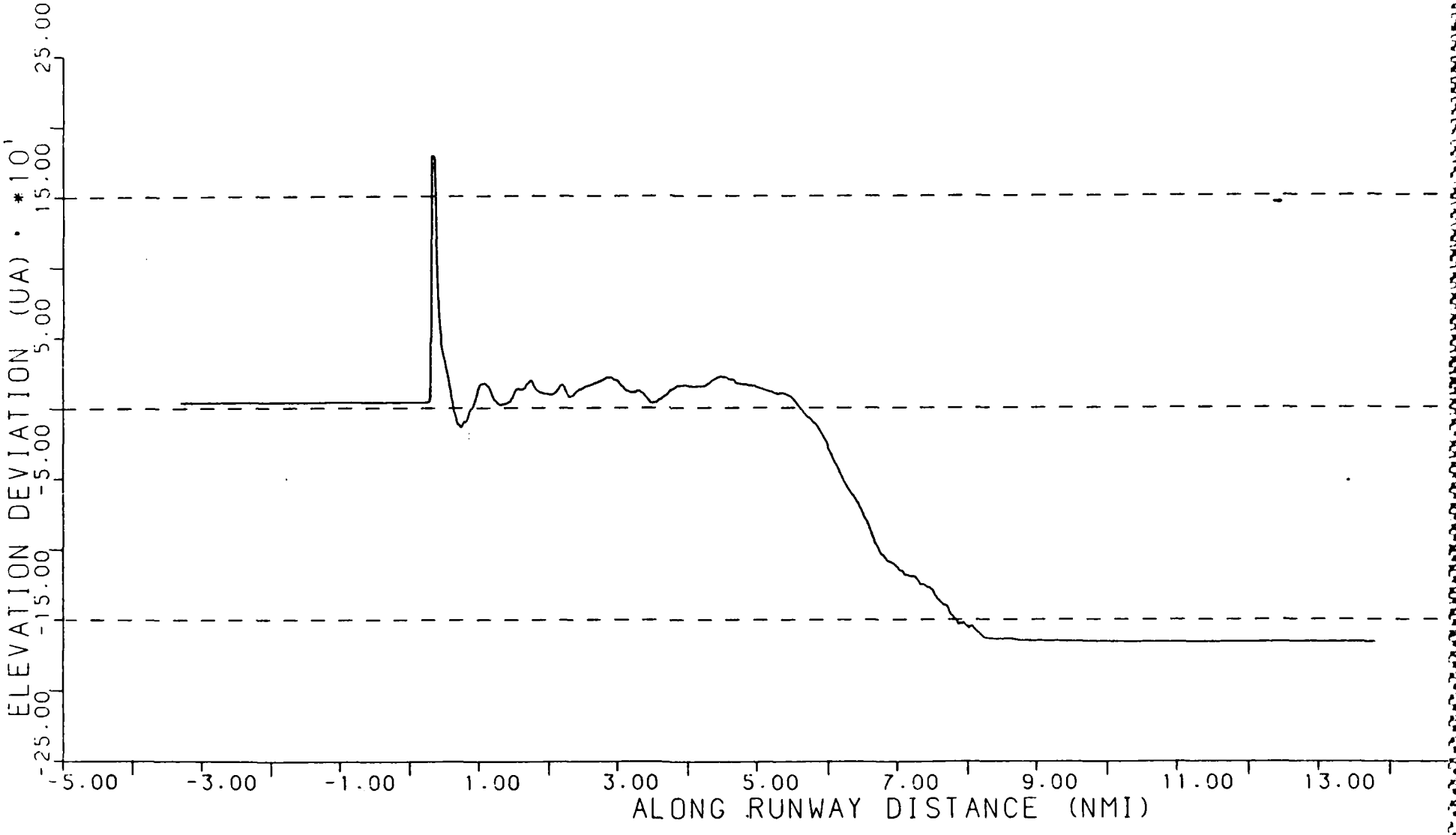
INPUT FILE.>MFB010.. RUN NUMBER >15
RUN START.>10: 0: 2.. RUN STOP.>10: 3: 9
3 DEG-CAT II LAND

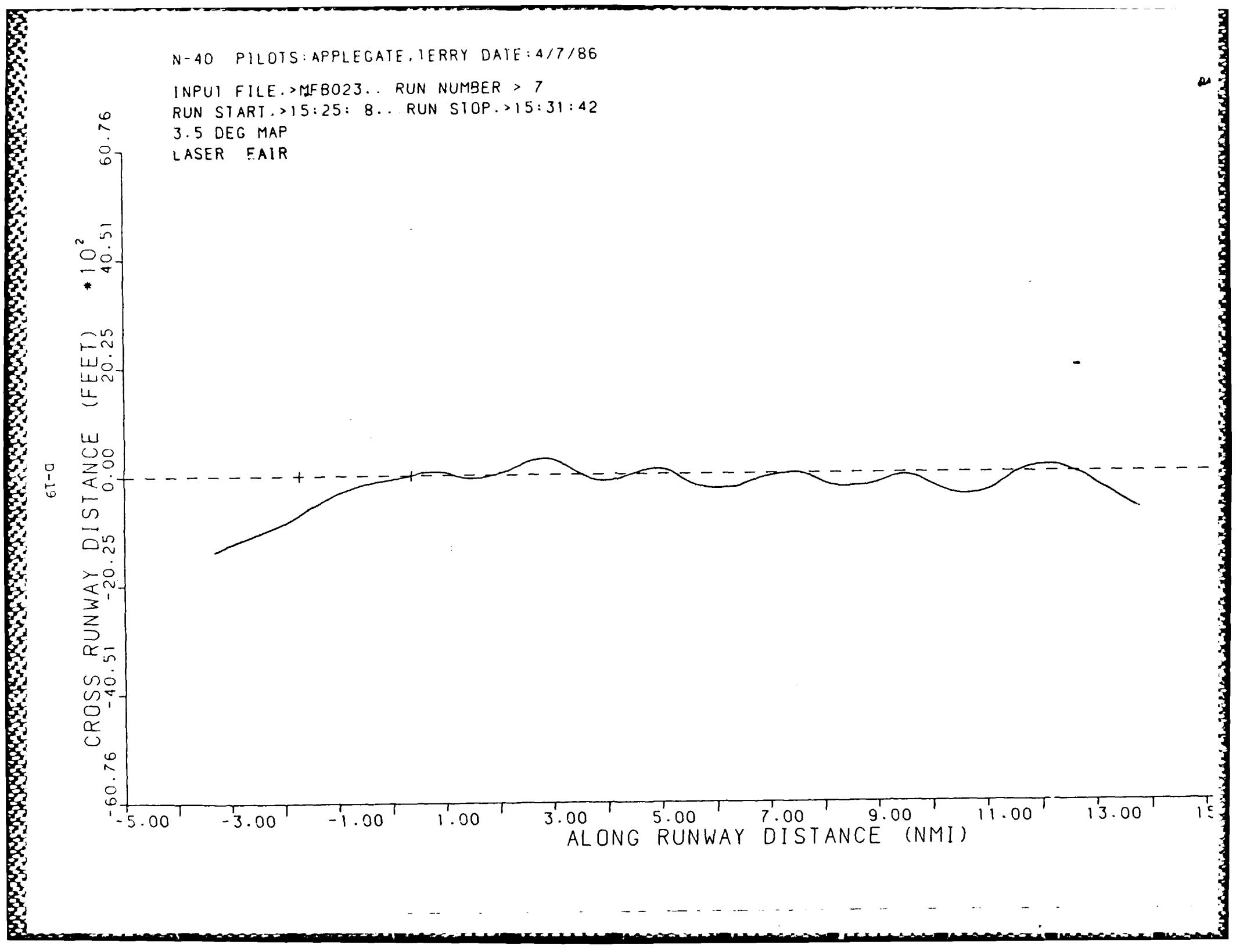



N-43 PILOTS:APPLEGATE.JERRY DATE:4/7/86
INPUT FILE.>MFB023.. RUN NUMBER > 7
RUN START.>15:25: 8...RUN STOP.>15:31:42
3.5 DEG MAP
LASER EAIR
ALTITUDE (FEET AGL) *10'
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

N-40 PILOTS:APPLEGATE,TERRY DATE:4/7/86

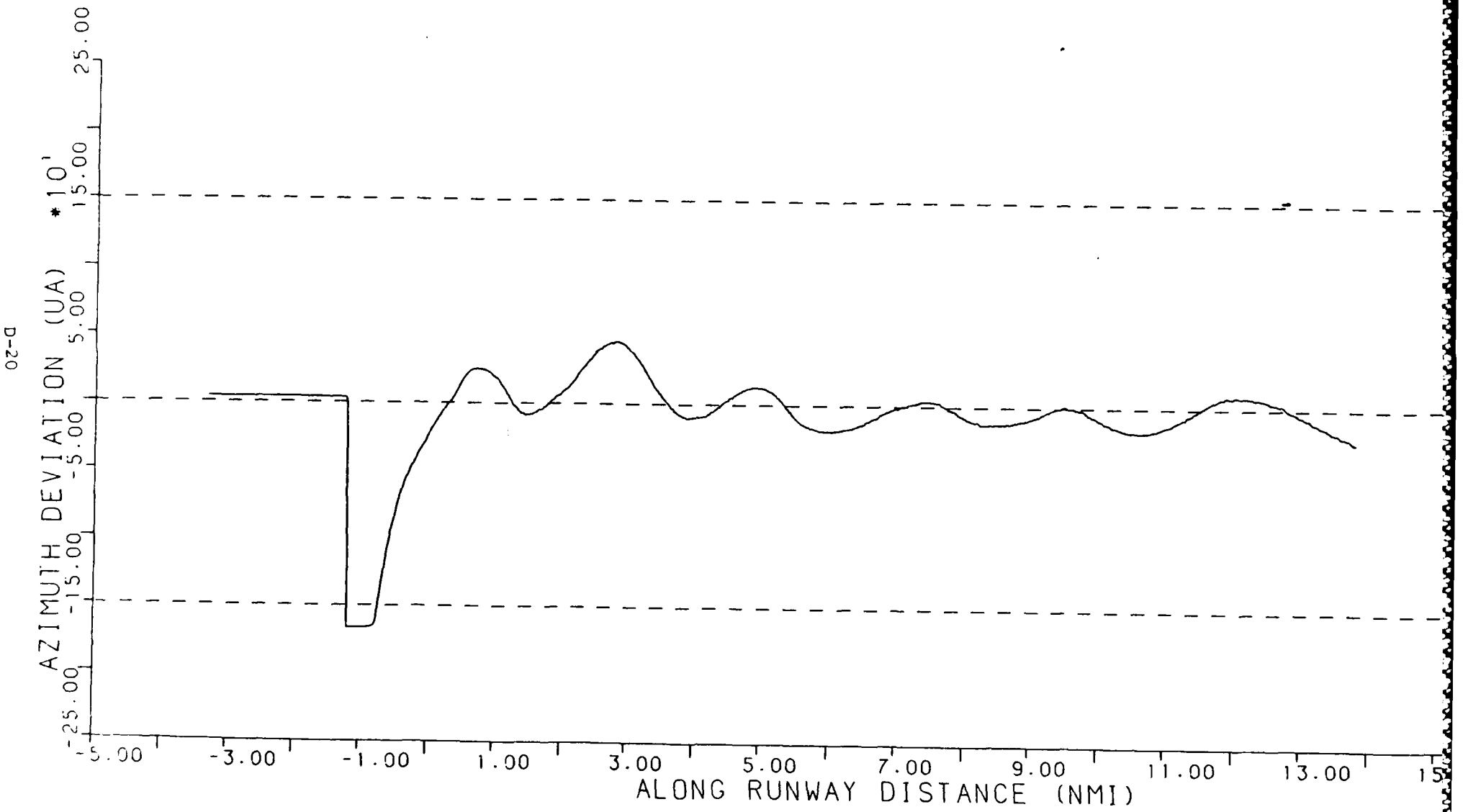
INPUT FILE.>MFB023.. RUN NUMBER > 7
RUN START.>15:25: 8.. RUN STOP.>15:31:42
3.5 DEG MAP




N-40 PILOTS:APPLEGATE,JERRY DATE:4/7/86
INPUT FILE.>MFB023.. RUN NUMBER > 7
RUN START.>15:25: 8.. RUN STOP.>15:31:42
3.5 DEG MAP
LASER FAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)
D-19

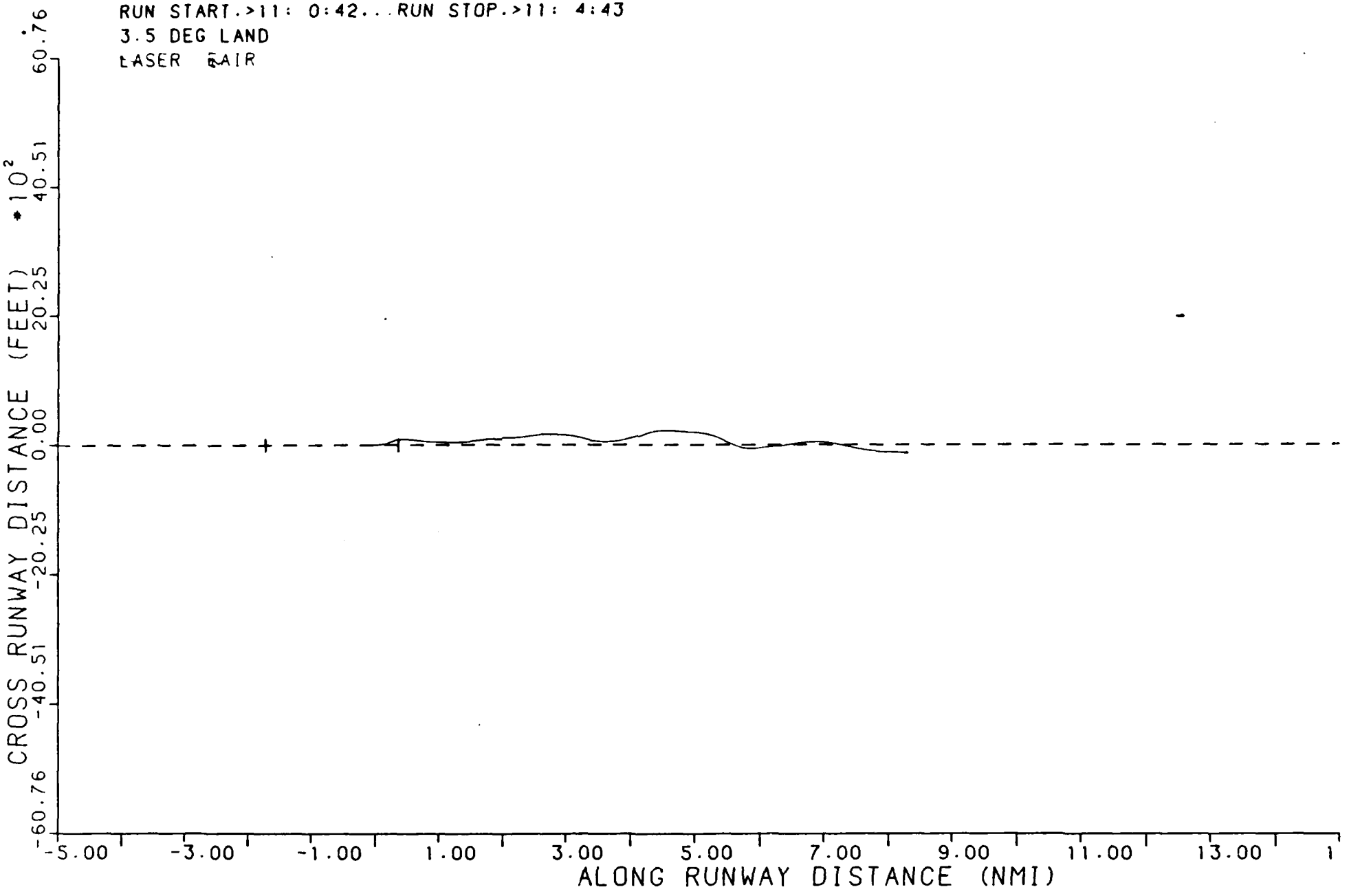
N-40 PILOTS:APPLEGATE,TERRY DATE:4/7/86

INPUT FILE.>MFB023. RUN NUMBER > 7
RUN START.>15:25: 8.. RUN STOP.>15:31:42
3.5 DEG MAP



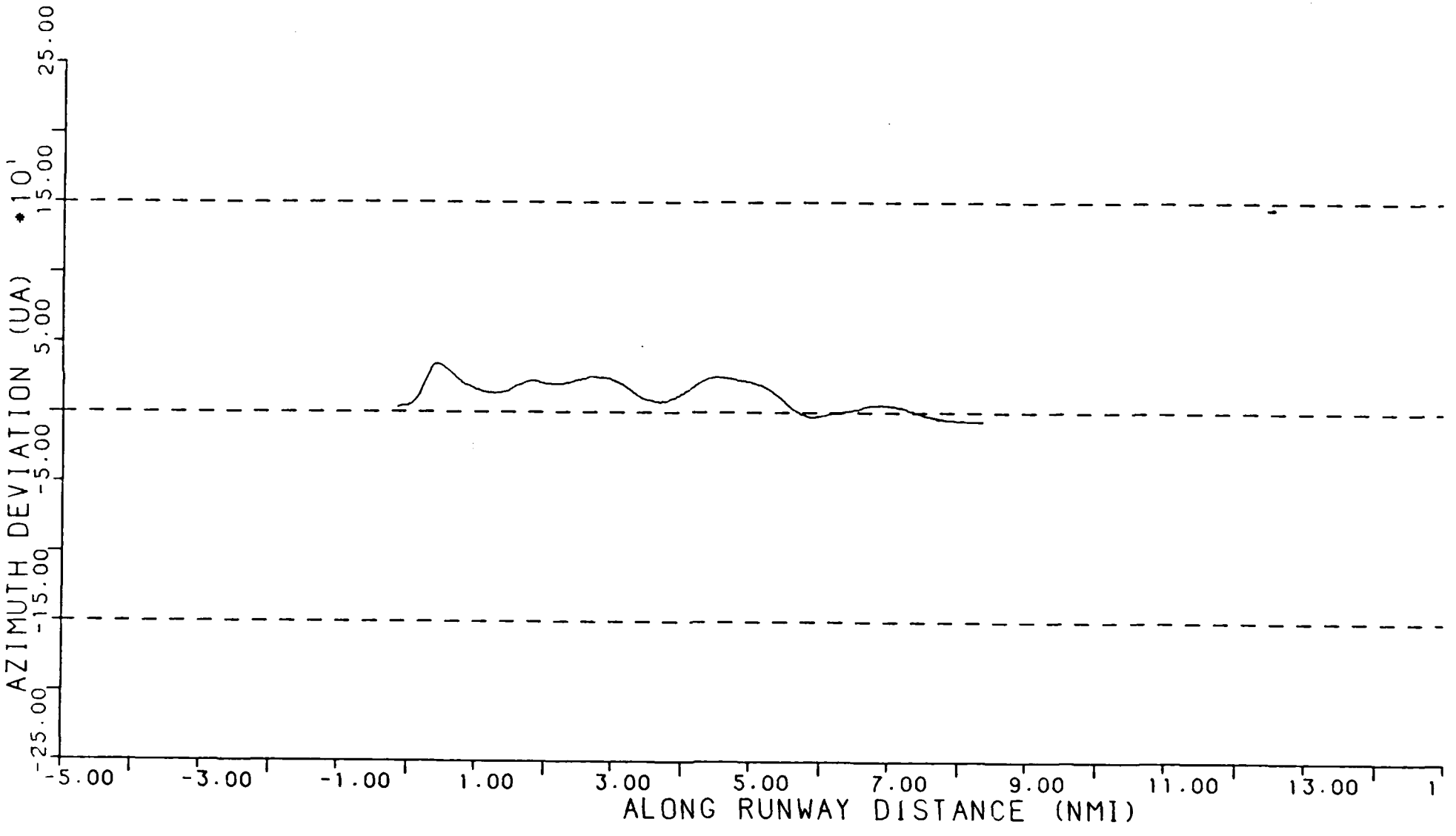
N-40 PILOTS:LORENZINI.WHITE DATE:4/9/86

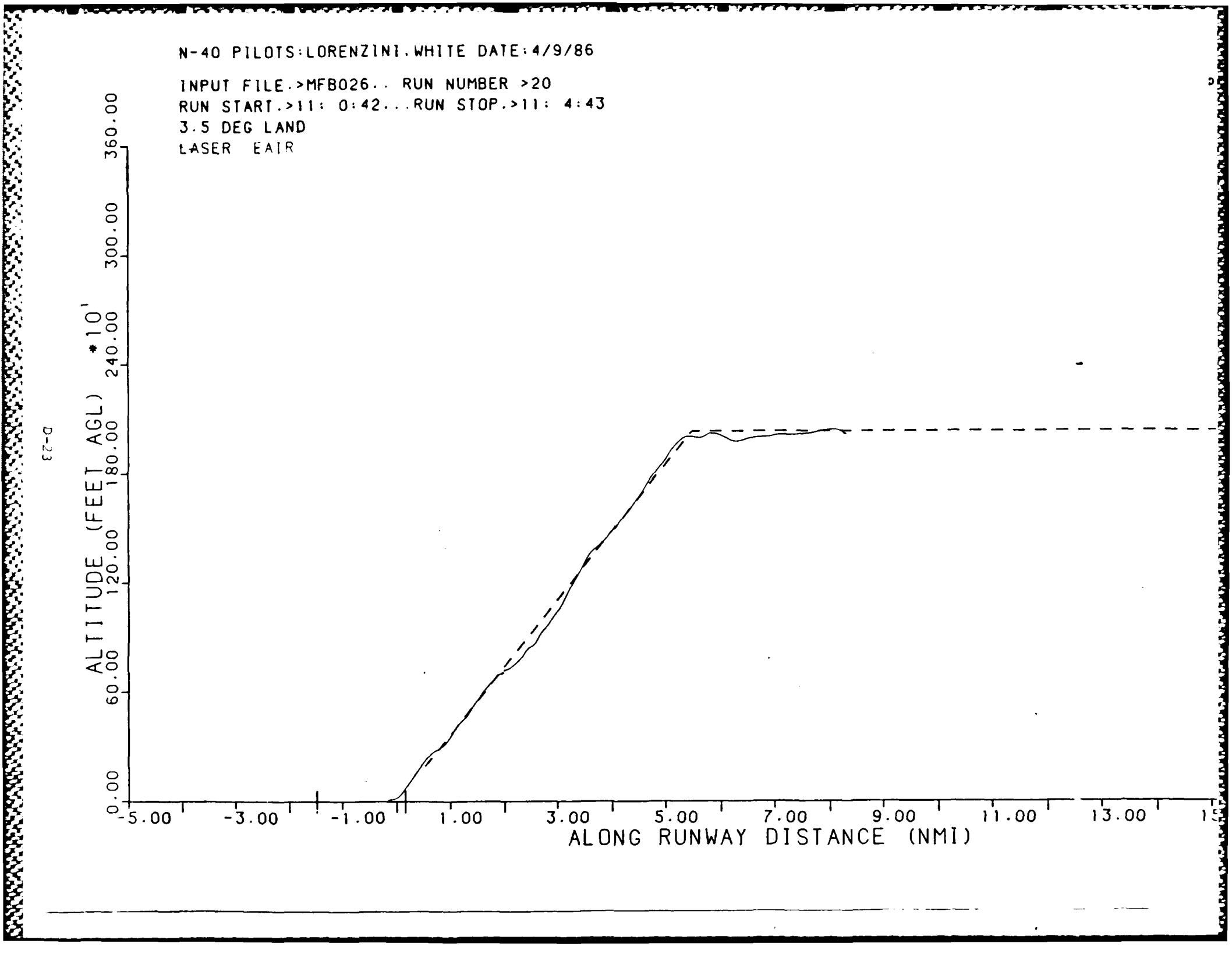
INPUT FILE.>MFB026...RUN NUMBER >20
RUN START.>11: 0:42...RUN STOP.>11: 4:43
3.5 DEG LAND
LASER AIR



N-40 PILOTS:LORENZINI.WHITE DATE:4/9/86

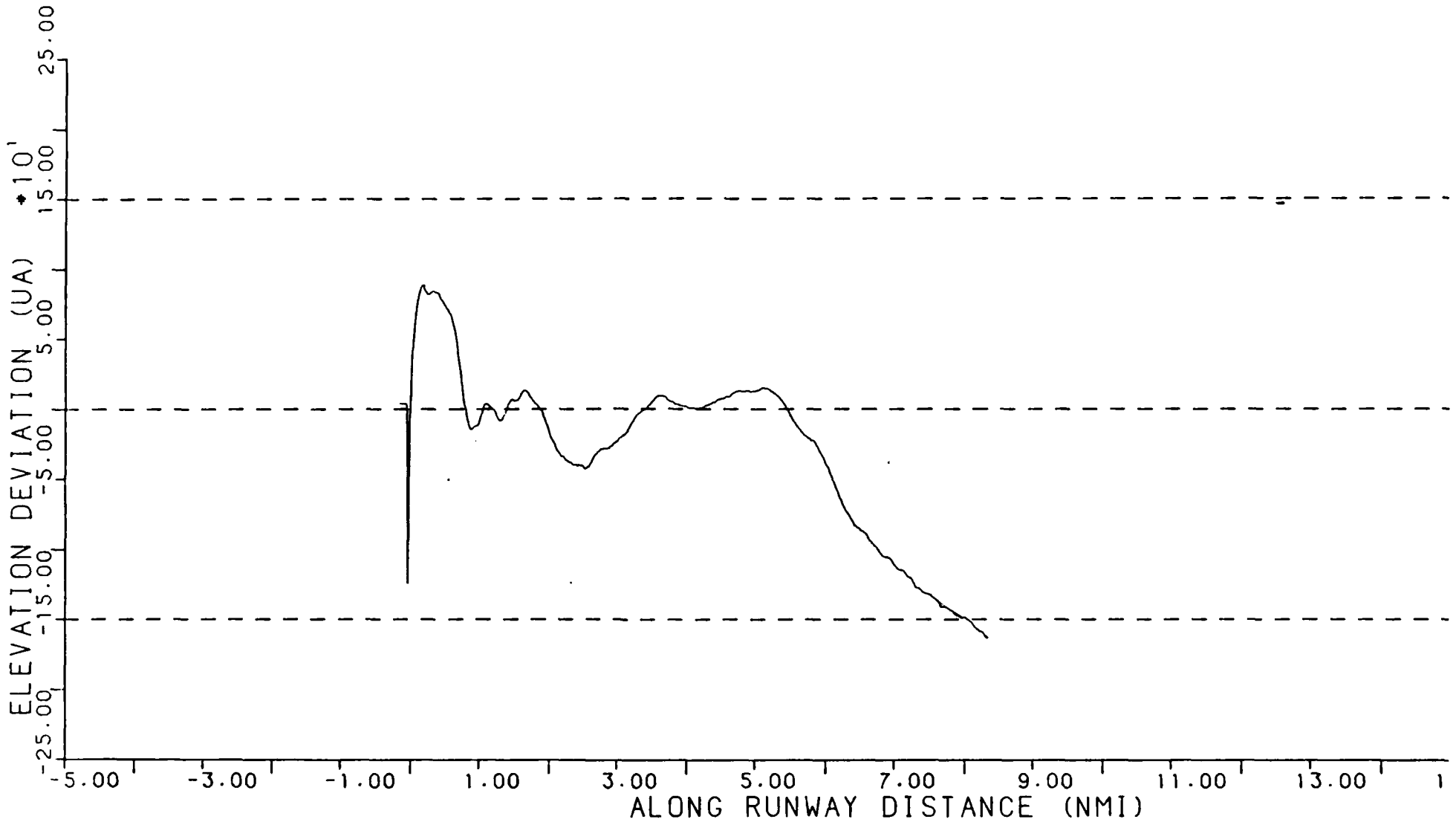
INPUT FILE.>MFB026...RUN NUMBER >20
RUN START.>11: 0:42...RUN STOP.>11: 4:43
3.5 DEG LAND

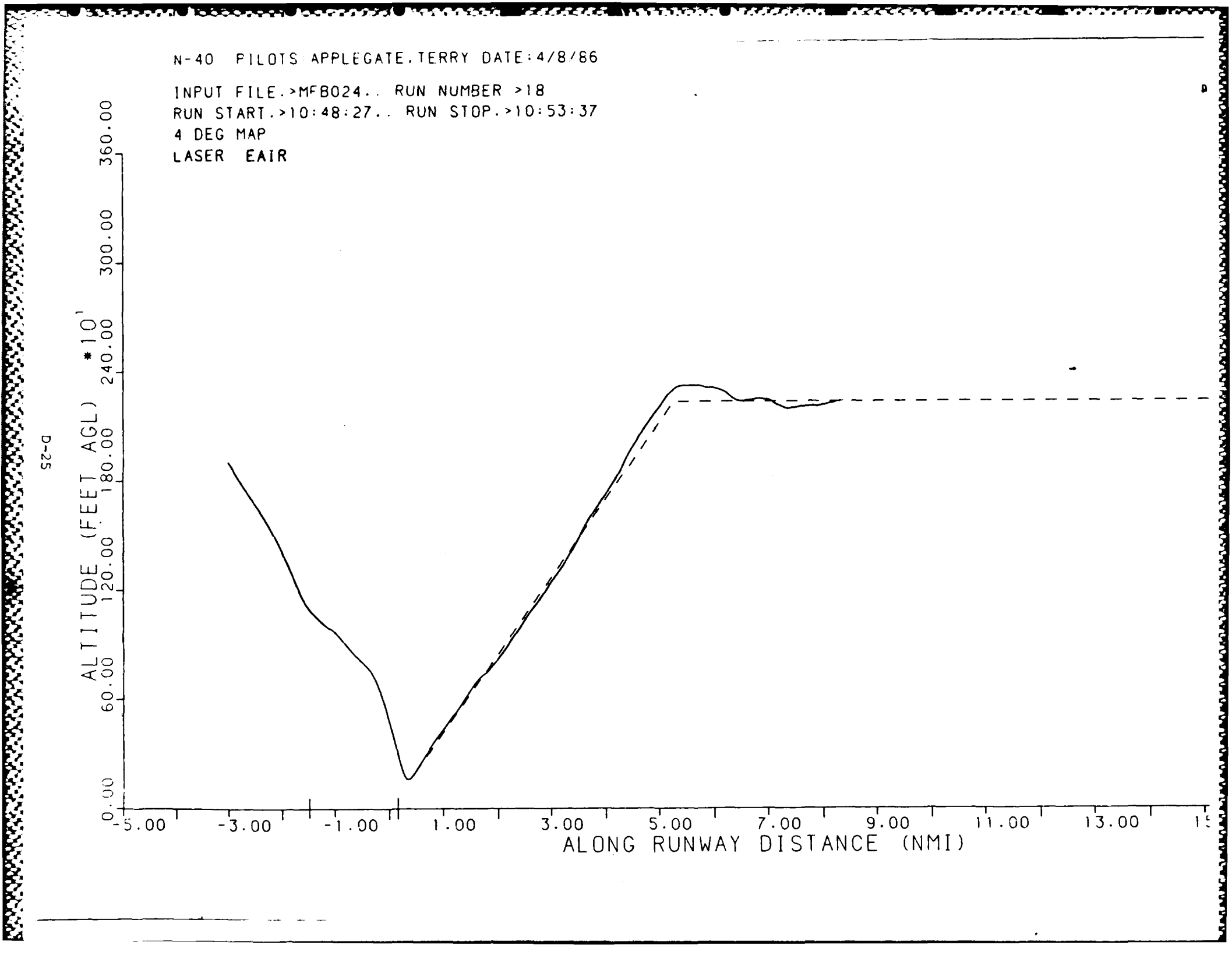



N-40 PILOTS:LORENZINI.WHITE DATE:4/9/86
INPUT FILE.>MFB026.. RUN NUMBER >20
RUN START.>11: 0:42...RUN STOP.>11: 4:43
3.5 DEG LAND
LASER EAIR
ALTITUDE (FEET AGL) *10'
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

N-40 PILOTS:LORENZINI.WHITE DATE:4/9/86

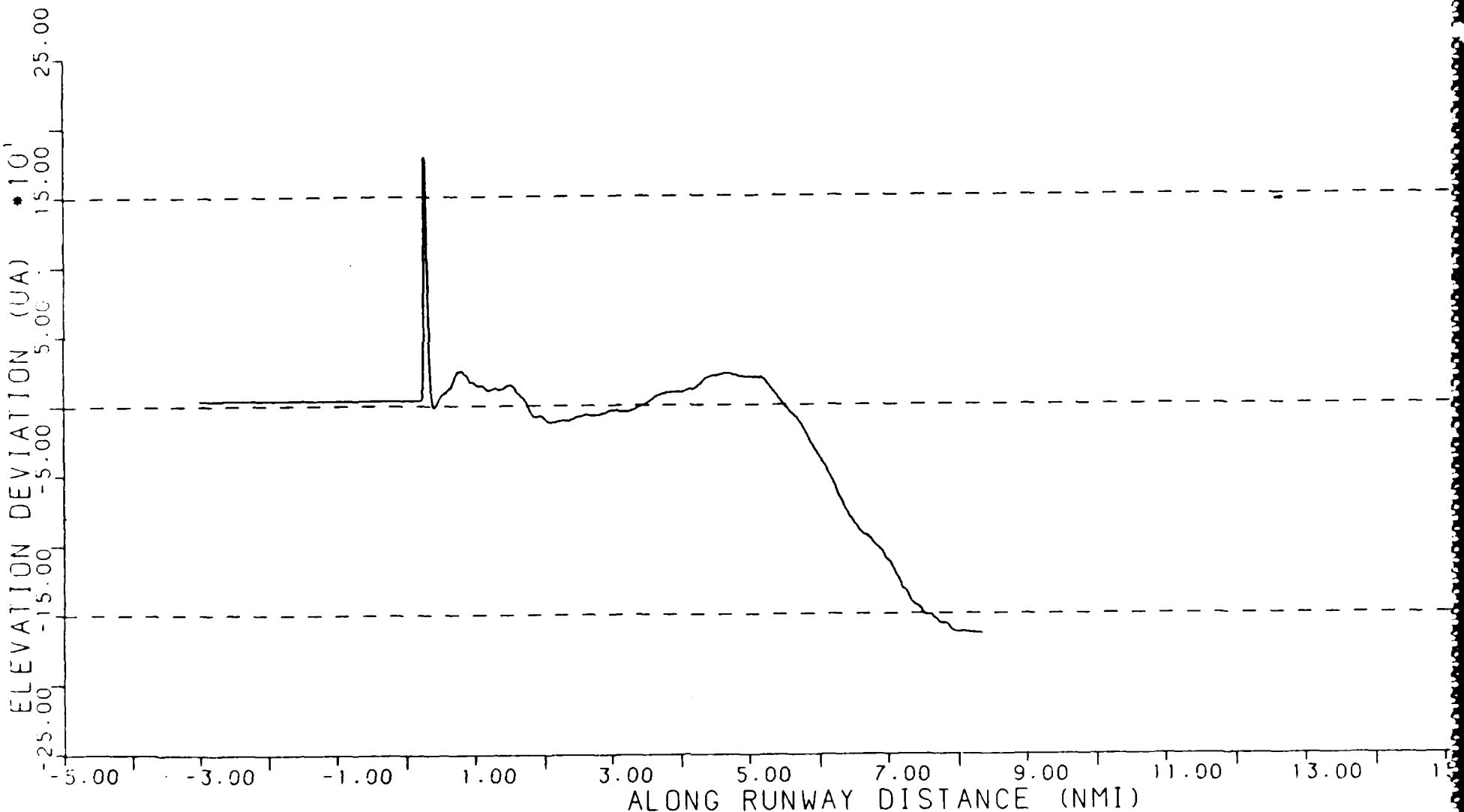
INPUT FILE.>MFB026.. RUN NUMBER >20
RUN START.>11: 0:42...RUN STOP.>11: 4:43
3.5 DEG LAND

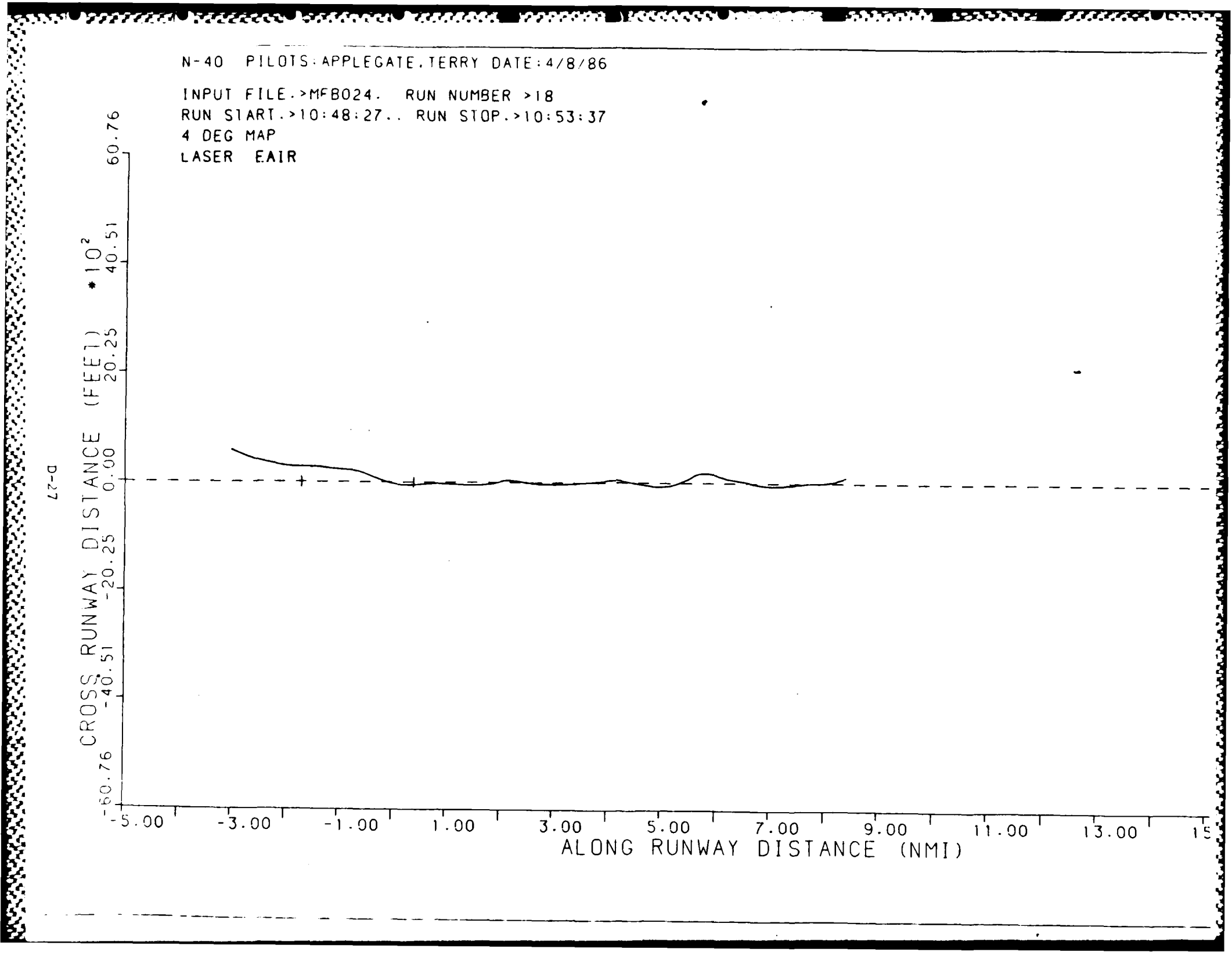



N-40 PILOTS APPLEGATE,TERRY DATE:4/8/86
INPUT FILE.>MFB024.. RUN NUMBER >18
RUN START.>10:48:27.. RUN STOP.>10:53:37
4 DEG MAP
LASER EAIR
ALTITUDE (FEET AGL) *10¹
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

N-40 PILOTS:APPLEGATE,TERRY DATE:4/8/86

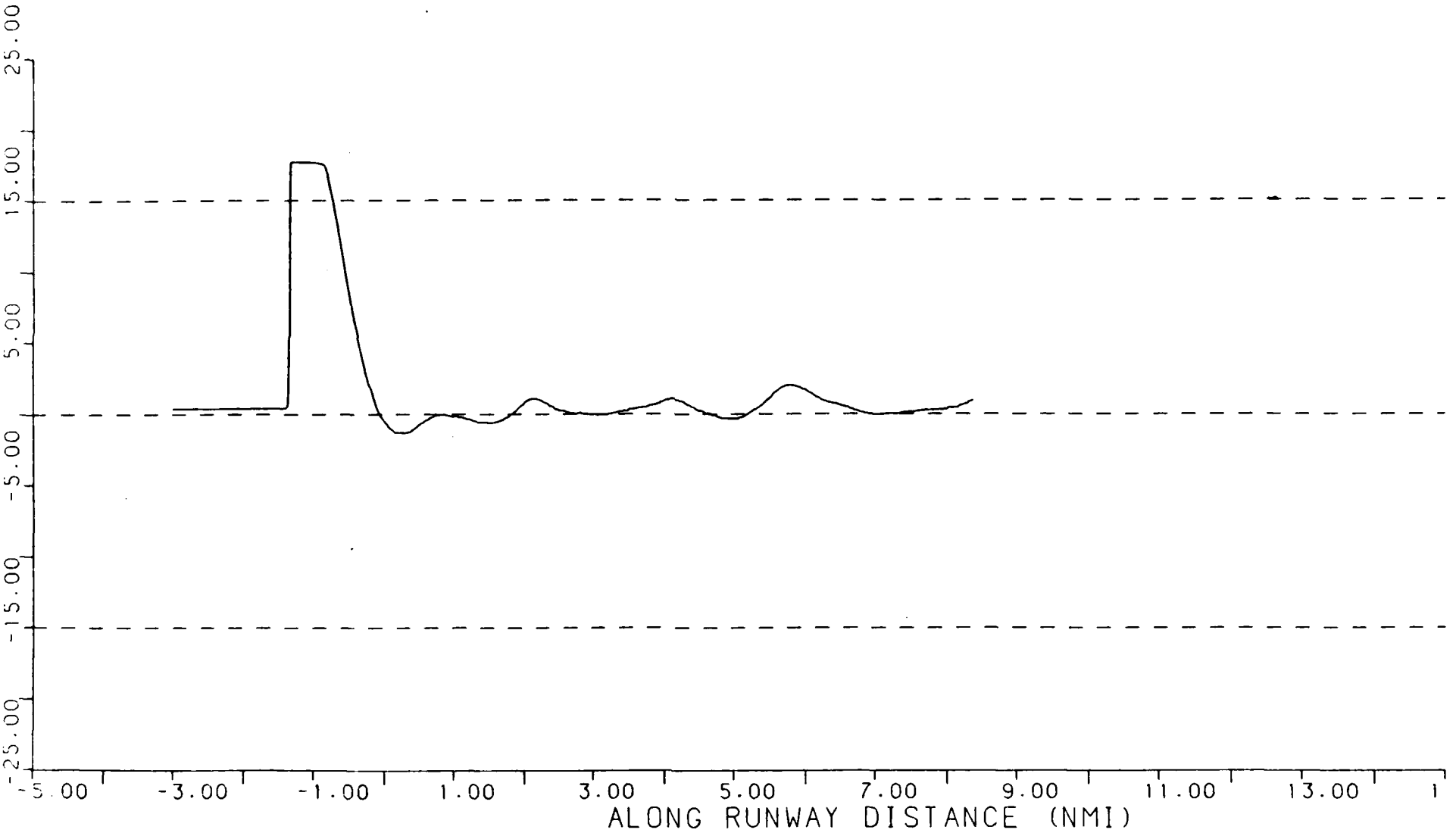
INPUT FILE.>MFB024.. RUN NUMBER >18
RUN START.>10:48:27.. RUN STOP.>10:53:37
4 DEG MAP




N-40 PILOTS:APPLEGATE.TERRY DATE:4/8/86
INPUT FILE.>MFB024. RUN NUMBER >18
RUN START.>10:48:27.. RUN STOP.>10:53:37
4 DEG MAP
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)
D-27

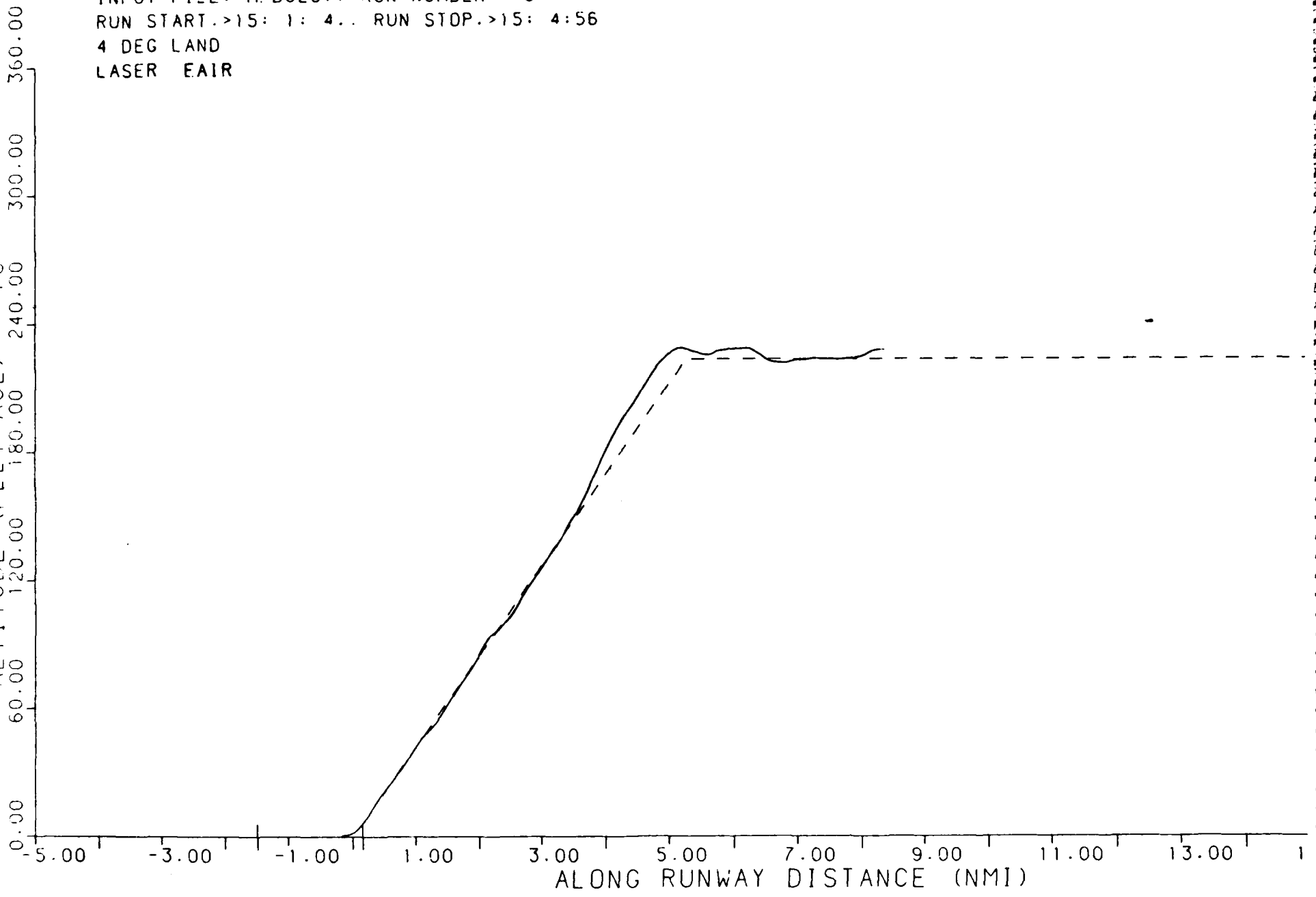
N-40 PILOTS: APPLEGATE, TERRY DATE: 4/8/86

INPUT FILE.>MFB024.. RUN NUMBER >18
RUN START.>10:48:27.. RUN STOP.>10:53:37
4 DEG MAP



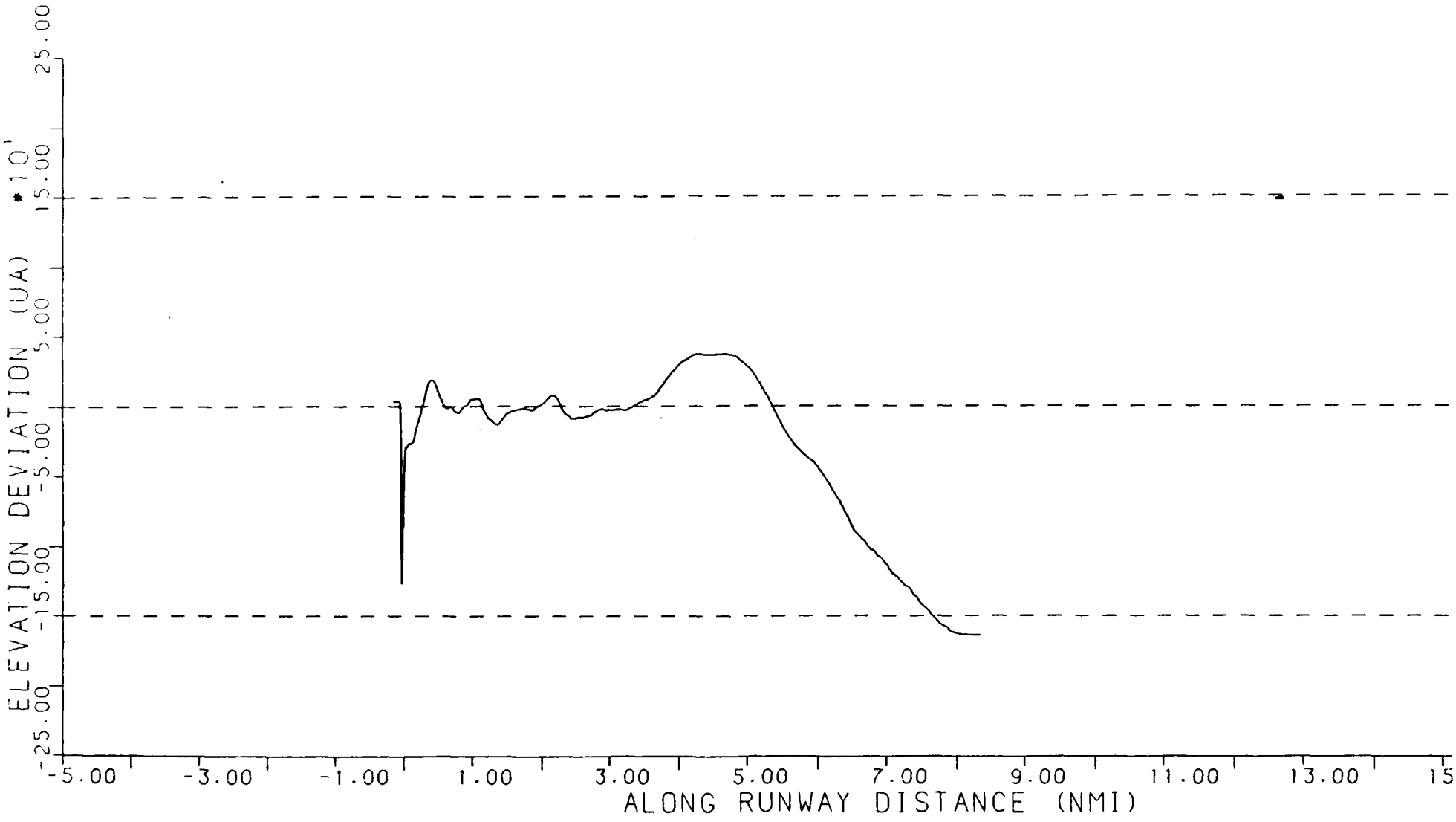
N-40 PILOTS:APPLEGATE,TERRY DATE:4/7/86

INPUT FILE.>MFB023.. RUN NUMBER > 5
RUN START.>15: 1: 4.. RUN STOP.>15: 4:56
4 DEG LAND
LASER EAIR



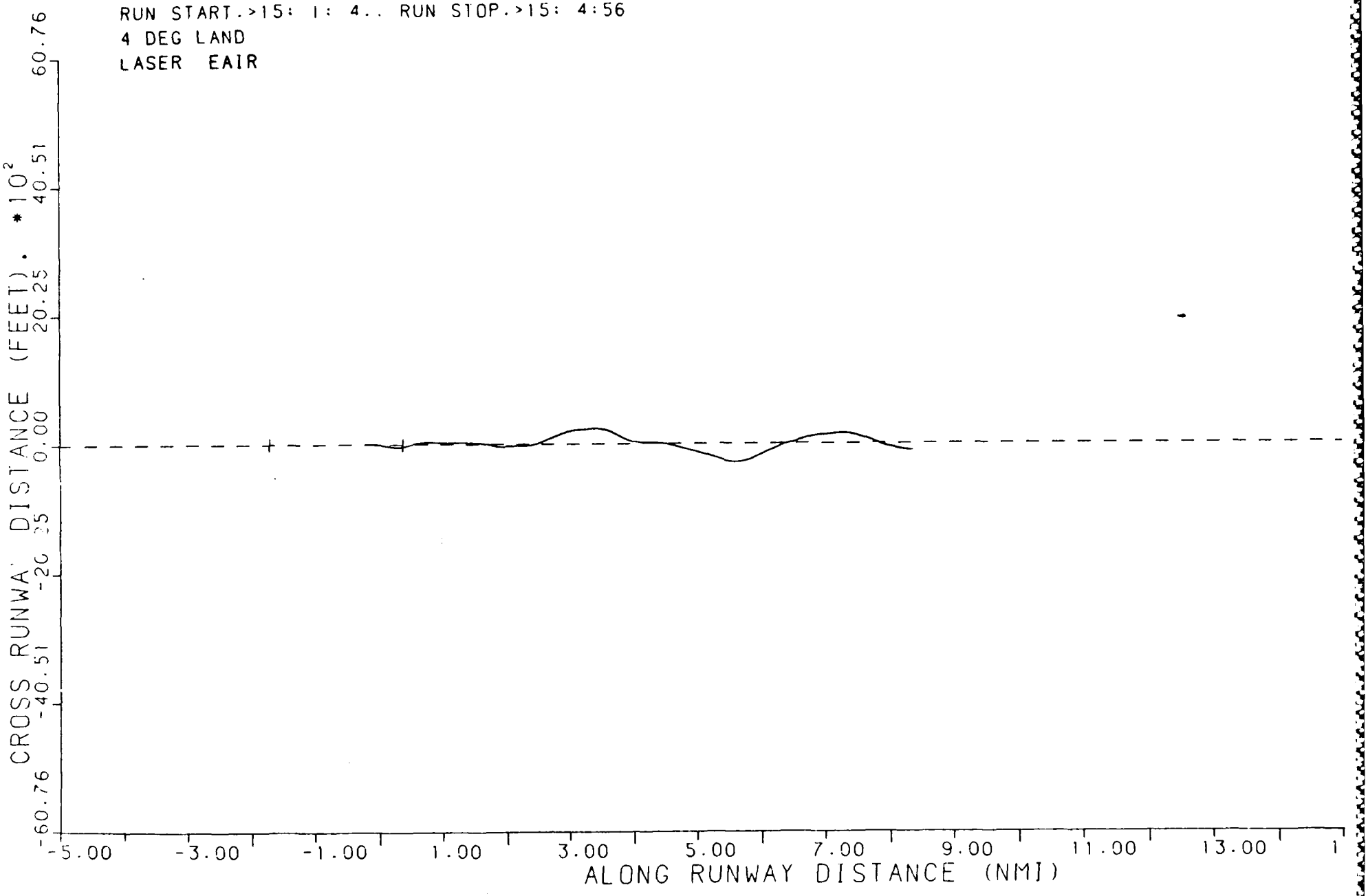
N-40 PILOTS:APPLEGATE,TERRY DATE:4/7/86

INPUT FILE.>MFB023.. RUN NUMBER > 5
RUN START.>15: 1: 4.. RUN STOP.>15: 4:56
4 DEG LAND



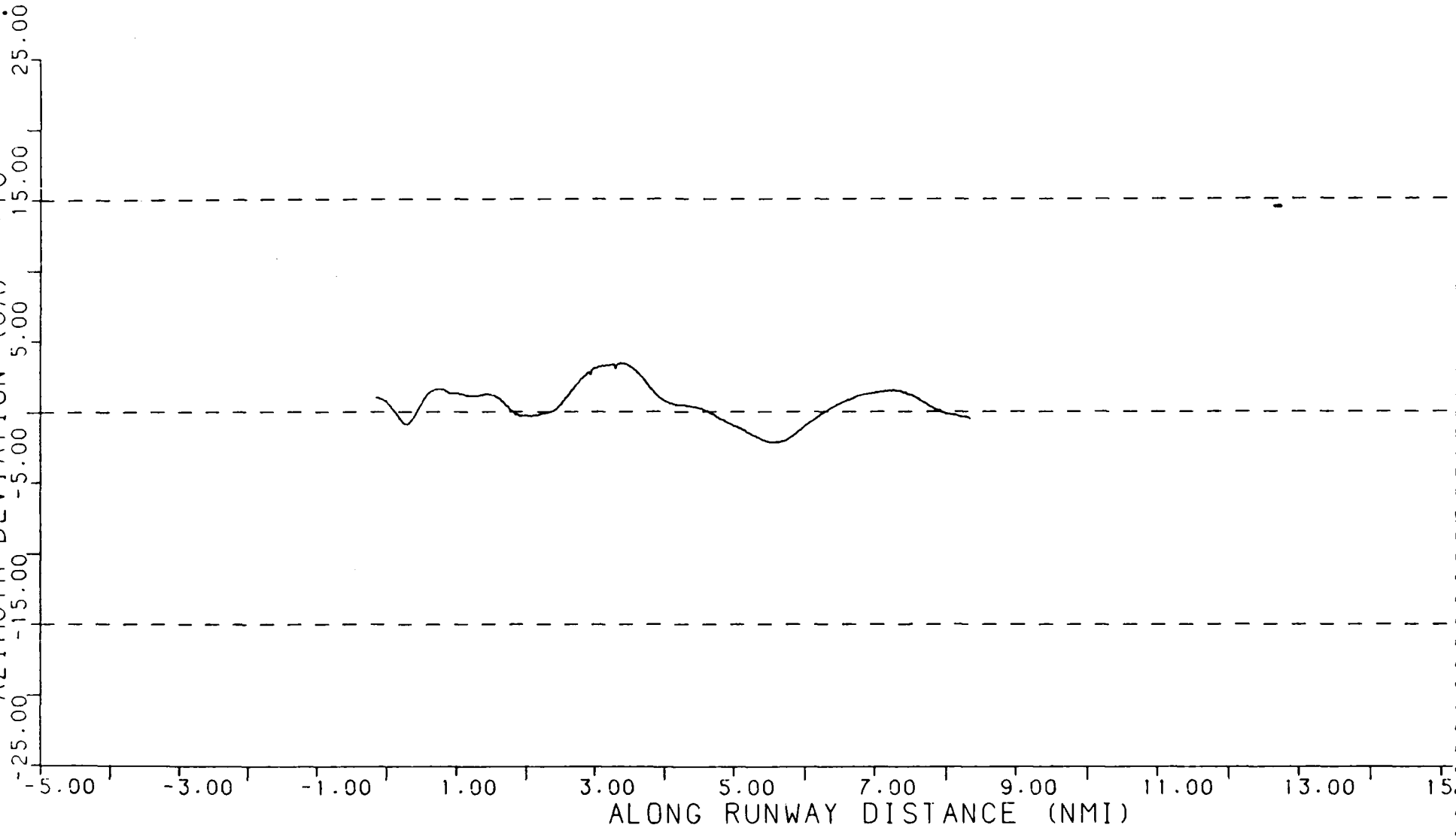
N-40 PILOTS:APPLEGATE,TERRY DATE:4/7/86

INPUT FILE.>MEB023.. RUN NUMBER > 5
RUN START.>15: 1: 4.. RUN STOP.>15: 4:56
4 DEG LAND
LASER EAIR



N-40 PILOTS:APPLEGATE,TERRY DATE:4/7/86

INPUT FILE.>MFB023. RUN NUMBER > 5
RUN START.>15: 1: 4.. RUN STOP.>15: 4:56
4 DEG LAND



APPENDIX E

SAMPLE SUMMARY STATISTICS

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CF52IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
63096.56	15.	-0.014	0.396	-0.099	2.270	499
63053.39	16.	0.148	0.753	2.126	7.998	498
62889.35	18.	0.126	0.700	2.226	8.812	497
62725.31	18.	0.119	0.690	2.156	8.543	496
62561.27	19.	0.329	1.159	2.433	8.482	495
62397.23	19.	0.318	1.142	2.427	8.516	494
62233.18	19.	0.306	1.125	2.424	8.564	493
62069.14	19.	0.297	1.107	2.423	8.623	492
61905.10	19.	0.287	1.089	2.424	8.691	491
61741.06	19.	0.277	1.071	2.427	8.771	490
61577.02	19.	0.268	1.053	2.434	8.863	489
61412.98	19.	0.258	1.035	2.442	8.962	488
61248.93	19.	0.248	1.017	2.450	9.063	487
61084.89	19.	0.239	0.999	2.460	9.167	486
60920.85	19.	0.229	0.932	2.472	9.280	485
60756.81	19.	0.220	0.965	2.486	9.405	484
60592.77	19.	0.046	0.496	0.795	4.113	483
60428.72	19.	0.039	0.481	0.709	3.974	482
60264.68	19.	0.032	0.466	0.628	3.858	481

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFB2IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
60100.64	19.	0.026	0.453	0.553	3.470	480
59936.60	22.	0.189	0.818	2.701	11.318	479
59772.55	22.	0.182	0.804	2.710	11.392	478
59608.51	22.	0.175	0.791	2.713	11.438	477
59444.47	22.	0.169	0.777	2.714	11.464	476
59280.43	22.	0.162	0.763	2.713	11.476	475
59116.39	22.	0.157	0.750	2.711	11.476	474
58952.34	22.	0.151	0.736	2.706	11.458	473
58788.30	22.	0.146	0.723	2.697	11.416	472
58624.26	22.	0.140	0.710	2.683	11.346	471
58460.22	22.	0.134	0.698	2.665	11.252	470
58296.18	22.	0.128	0.686	2.642	11.136	469
58132.14	22.	0.122	0.674	2.617	11.001	468
57968.09	22.	0.116	0.663	2.588	10.846	467
57804.05	22.	0.110	0.652	2.555	10.668	466
57640.01	22.	0.105	0.641	2.518	10.463	465
57475.97	22.	0.100	0.631	2.475	10.233	464
57311.93	22.	0.094	0.620	2.429	9.988	463
57147.88	22.	0.089	0.610	2.383	9.743	462

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFB2IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
56983.84	22.	0.084	0.600	2.339	9.508	461
56819.80	22.	0.079	0.591	2.294	9.270	460
56655.76	22.	0.074	0.581	2.245	9.014	459
56491.71	22.	0.068	0.572	2.191	8.733	458
56327.67	22.	0.063	0.563	2.132	8.431	457
56163.63	22.	0.057	0.554	2.069	8.112	456
55999.59	22.	0.051	0.546	2.001	7.780	455
55835.55	22.	0.045	0.538	1.929	7.435	454
55671.50	22.	0.040	0.530	1.852	7.076	453
55507.46	22.	0.035	0.522	1.769	6.707	452
55343.42	23.	0.006	0.515	1.678	6.344	451
55179.38	23.	-0.002	0.512	1.532	5.841	450
55015.34	23.	-0.010	0.510	1.370	5.366	449
54851.30	23.	-0.017	0.509	1.197	4.939	448
54687.25	23.	-0.024	0.508	1.017	4.573	447
54523.21	23.	-0.032	0.508	0.833	4.277	446
54359.17	23.	-0.040	0.509	0.649	4.055	445
54195.13	23.	-0.047	0.510	0.466	3.912	444
54031.09	23.	-0.055	0.511	0.286	3.845	443

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFB2IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
53867.04	23.	-0.061	0.512	0.109	3.856	442
53703.00	23.	-0.067	0.514	-0.066	3.937	441
53538.96	23.	-0.071	0.515	-0.235	4.081	440
53374.92	23.	-0.075	0.515	-0.398	4.274	439
53210.88	23.	-0.078	0.516	-0.553	4.502	438
53046.83	23.	-0.082	0.518	-0.697	4.750	437
52882.79	23.	-0.085	0.519	-0.830	5.014	436
52718.75	23.	-0.088	0.521	-0.951	5.285	435
52554.71	23.	-0.091	0.522	-1.062	5.564	434
52390.66	23.	-0.094	0.523	-1.164	5.851	433
52226.63	23.	-0.095	0.524	-1.262	6.150	432
52062.58	23.	-0.095	0.524	-1.354	6.456	431
51898.54	23.	-0.094	0.524	-1.442	6.767	430
51734.50	23.	-0.093	0.524	-1.523	7.088	429
51570.46	23.	-0.091	0.523	-1.602	7.430	428
51406.41	23.	-0.088	0.522	-1.680	7.782	427
51242.37	23.	-0.084	0.521	-1.751	8.116	426
51078.33	24.	-0.096	0.514	-1.719	8.222	425
50914.29	27.	-0.093	0.489	-1.794	9.052	424

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CF82IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
50750.25	27.	-0.077	0.488	-1.912	9.483	423
50586.20	29.	-0.058	0.475	-2.040	10.205	422
50422.16	29.	-0.063	0.468	-2.171	10.770	421
50258.12	29.	-0.061	0.470	-2.168	10.744	420
50094.08	32.	-0.048	0.465	-2.029	10.480	419
49930.04	32.	-0.045	0.468	-2.016	10.389	418
49765.99	32.	-0.042	0.471	-2.002	10.297	417
49601.95	32.	-0.039	0.474	-1.989	10.216	416
49437.91	32.	-0.036	0.477	-1.980	10.161	415
49273.87	32.	-0.032	0.480	-1.972	10.130	414
49109.82	32.	-0.028	0.482	-1.965	10.113	413
48945.79	32.	-0.025	0.484	-1.955	10.088	412
48781.74	32.	-0.022	0.487	-1.939	10.041	411
48617.70	32.	-0.020	0.490	-1.919	9.970	410
48453.66	32.	-0.017	0.493	-1.898	9.888	409
48289.62	32.	-0.015	0.496	-1.877	9.817	408
48125.57	32.	-0.012	0.499	-1.860	9.780	407
47961.53	32.	-0.009	0.501	-1.848	9.790	406
47797.49	32.	-0.006	0.502	-1.844	9.842	405

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CF52IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
47633.45	32.	-0.002	0.503	-1.847	9.921	404
47469.41	32.	0.002	0.504	-1.855	10.003	403
47305.36	32.	0.005	0.505	-1.867	10.078	402
47141.32	32.	0.008	0.506	-1.882	10.150	401
46977.28	32.	0.010	0.507	-1.900	10.223	400
46813.24	32.	0.011	0.507	-1.920	10.296	399
46649.20	32.	0.013	0.507	-1.941	10.368	398
46485.15	32.	0.014	0.508	-1.963	10.434	397
46321.11	32.	0.016	0.508	-1.986	10.503	396
46157.07	32.	0.018	0.508	-2.014	10.596	395
45993.03	32.	0.021	0.508	-2.048	10.724	394
45828.98	32.	0.033	0.502	-2.176	11.497	393
45664.95	32.	0.039	0.502	-2.221	11.703	392
45500.90	33.	0.120	0.603	-0.685	8.587	391
45336.86	33.	0.123	0.598	-0.794	8.636	390
45172.82	33.	0.126	0.593	-0.895	8.685	389
45008.78	33.	0.129	0.589	-0.996	8.767	388
44844.73	33.	0.131	0.583	-1.099	8.894	387
44680.69	33.	0.133	0.578	-1.202	9.063	386

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFB2IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
44516.65	33.	0.135	0.574	-1.295	9.254	385
44352.61	33.	0.138	0.570	-1.371	9.446	384
44188.57	33.	0.141	0.567	-1.435	9.642	383
44024.52	33.	0.145	0.564	-1.491	9.836	382
43860.48	33.	0.148	0.562	-1.542	10.013	381
43696.44	33.	0.150	0.559	-1.596	10.177	380
43532.40	35.	0.141	0.548	-1.592	10.168	379
43368.36	35.	0.144	0.545	-1.661	10.360	378
43204.31	35.	0.147	0.541	-1.729	10.561	377
43040.27	35.	0.149	0.537	-1.793	10.760	376
42876.23	35.	0.152	0.533	-1.846	10.933	375
42712.19	35.	0.154	0.530	-1.889	11.072	374
42548.14	35.	0.156	0.528	-1.925	11.188	373
42384.11	35.	0.159	0.525	-1.959	11.299	372
42220.06	35.	0.161	0.522	-1.993	11.409	371
42056.02	35.	0.163	0.519	-2.022	11.504	370
41891.98	35.	0.166	0.516	-2.046	11.576	369
41727.94	35.	0.168	0.513	-2.062	11.622	368
41563.89	35.	0.170	0.510	-2.070	11.641	367

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CF82IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
41399.85	35.	0.172	0.508	-2.068	11.631	366
41235.81	35.	0.173	0.505	-2.061	11.602	365
41071.77	35.	0.174	0.503	-2.052	11.566	364
40907.73	35.	0.175	0.500	-2.044	11.525	363
40743.68	35.	0.176	0.497	-2.033	11.468	362
40579.64	35.	0.177	0.494	-2.017	11.388	361
40415.60	35.	0.178	0.491	-2.000	11.308	360
40251.56	35.	0.178	0.487	-1.984	11.230	359
40087.52	35.	0.177	0.484	-1.964	11.134	358
39923.47	35.	0.177	0.481	-1.940	11.009	357
39759.43	35.	0.177	0.478	-1.912	10.854	356
39595.39	35.	0.176	0.476	-1.878	10.667	355
39431.35	35.	0.174	0.474	-1.837	10.441	354
39267.30	35.	0.172	0.472	-1.788	10.174	353
39103.27	35.	0.169	0.471	-1.735	9.876	352
38939.22	35.	0.167	0.470	-1.680	9.563	351
38775.18	35.	0.165	0.470	-1.619	9.222	350
38611.14	35.	0.162	0.471	-1.553	8.861	349
38447.10	35.	0.160	0.471	-1.484	8.487	348

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CF62IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
38283.05	35.	0.157	0.473	-1.416	8.121	347
38119.01	35.	0.154	0.474	-1.342	7.748	346
37954.97	35.	0.149	0.477	-1.263	7.375	345
37790.93	35.	0.145	0.479	-1.184	7.010	344
37626.89	35.	0.140	0.482	-1.109	6.664	343
37462.84	35.	0.134	0.484	-1.038	6.337	342
37298.80	35.	0.129	0.486	-0.969	6.034	341
37134.76	35.	0.123	0.489	-0.901	5.749	340
36970.72	35.	0.118	0.491	-0.832	5.482	339
36806.68	35.	0.112	0.494	-0.762	5.234	338
36642.63	35.	0.107	0.498	-0.695	5.010	337
36478.59	35.	0.103	0.500	-0.632	4.808	336
36314.55	35.	0.098	0.503	-0.571	4.621	335
36150.51	35.	0.093	0.506	-0.511	4.440	334
35986.46	35.	0.090	0.509	-0.460	4.267	333
35822.43	35.	0.088	0.513	-0.426	4.109	332
35658.38	35.	0.089	0.517	-0.403	3.962	331
35494.34	35.	0.089	0.522	-0.379	3.817	330
35330.30	35.	0.089	0.526	-0.353	3.697	329

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFB2IA.CSL
DECISION HEIGHT 200 FT
STANDARD STATISTICS SUMMARY

LONGITUDINAL BINS FOR INITIAL APPROACH SEGMENT

AZIMUTH TOTAL SYSTEM ERROR (DEG)

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FEET FROM THETA	POINTS	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS	BIN #
35166.26	36.	0.081	0.522	-0.292	3.661	328
35002.21	36.	0.080	0.523	-0.259	3.601	327
34838.17	36.	0.080	0.524	-0.223	3.551	326
34674.13	36.	0.080	0.524	-0.189	3.510	325
34510.09	36.	0.080	0.524	-0.154	3.469	324

APPENDIX F

MINIMA ANALYSIS

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFE2MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

ALTITUDE AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	201.36	9.98	3.97	17.68

ALONG TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	3589.37	873.61	-2.36	8.54

CROSS TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	-19.99	50.41	-1.03	4.86

ALONG TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	2722.32	617.41	-1.07	5.42

CROSS TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	-20.12	41.50	-0.19	3.12

LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	162.17	20.55	1.59	8.20

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFB2MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

HEIGHT LOSS (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	39.20	17.30	-0.40	2.60

RADIO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	207.34	13.74	1.86	7.09

BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	-39.33	1004.55	-2.93	9.60

COARSE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	39.02	5.34	-0.36	2.15

FINE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	4107.85	1.02	-0.09	3.02

RADIO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	154.31	25.02	0.56	3.65

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU2:CFB2MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	-82.62	991.17	-2.93	9.60

COARSE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	34.93	4.66	-0.84	3.67

FINE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
46.	4110.46	1.94	0.07	1.30

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU3:CFB3MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 100 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

ALTITUDE AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	101.60	10.76	4.85	26.48

ALONG TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	1772.30	603.82	-1.85	5.23

CROSS TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-14.55	28.33	0.07	3.61

ALONG TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	1441.18	309.77	-1.04	4.02

CROSS TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-9.85	27.08	0.08	3.60

LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	86.18	13.07	0.97	5.51

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU3:CFB3MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 100 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

HEIGHT LOSS (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	15.42	13.95	2.11	10.47

RADIO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	83.15	15.04	5.62	35.52

BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-130.21	965.83	-2.97	9.85

COARSE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	29.74	2.63	-1.36	7.39

FINE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	4117.28	3.32	0.76	3.09

RADIO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	64.43	13.39	0.67	4.09

B-727 3.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU3:CF83MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 100 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-149.53	959.88	-2.97	9.84

COARSE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	27.81	2.56	-0.34	4.89

FINE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	4120.06	3.50	0.25	2.61

B-727 3.5 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU4:CFB4MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

ALTITUDE AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	203.92	18.43	3.21	11.63

ALONG TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	3177.48	677.19	-3.49	17.10

CROSS TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	-12.88	54.60	0.04	2.82

ALONG TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	2202.34	464.98	-2.14	11.54

CROSS TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	-7.97	48.71	0.36	3.30

LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	155.54	19.62	2.14	10.66

B-727 3.5 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU4:CF54MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

HEIGHT LOSS (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	48.39	23.39	1.20	6.44

RADIO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	210.69	18.85	3.16	12.43

BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	-15.18	969.41	-3.05	10.34

COARSE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	59.08	5.79	0.23	3.22

FINE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	4106.10	1.61	-0.02	2.50

RADIO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	137.39	26.05	-1.74	14.61

B-727 3.5 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU4:CFB4MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	-72.48	952.55	-3.05	10.32

COARSE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	33.69	6.36	-3.23	17.23

FINE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
49.	4027.24	587.31	-6.78	47.02

E-727 4.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU5:CE85MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

ALTITUDE AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	200.11	10.47	6.57	44.44

ALONG TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	2845.35	327.13	-1.40	7.93

CROSS TRACK AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-11.20	48.85	-0.68	3.50

ALONG TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	1837.65	372.61	-0.37	2.71

CROSS TRACK AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-13.11	47.82	-0.17	3.37

LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	152.80	24.92	1.99	11.73

B-727 4.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU5:CE25MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

HEIGHT LOSS (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	47.31	18.81	0.14	3.05

RADIO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	202.13	11.58	2.46	11.19

BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-31.57	994.86	-2.97	9.85

COARSE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	38.79	5.05	-0.43	2.25

FINE BARO ALTIMETER AT DECISION HEIGHT (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	4108.21	1.40	0.32	2.39

RADIO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	134.89	25.24	2.20	12.43

B-727 4.0 DEGREE MLS APPROACH
COMPOSITE DATA FILE DU5:CF85MA.CSM

MINIMA ANALYSIS STATISTICS

DECISION HEIGHT 200 FT

DATA COLLECTED AND PROCESSED AT:
THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	-83.51	979.04	-2.97	9.84

COARSE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	34.02	4.34	-0.77	3.61

FINE BARO ALTIMETER AT LOWEST ALTITUDE (FT)

POINTS	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
47.	4111.49	2.13	-0.00	1.51

APPENDIX G

COMPOSITE PLOTS

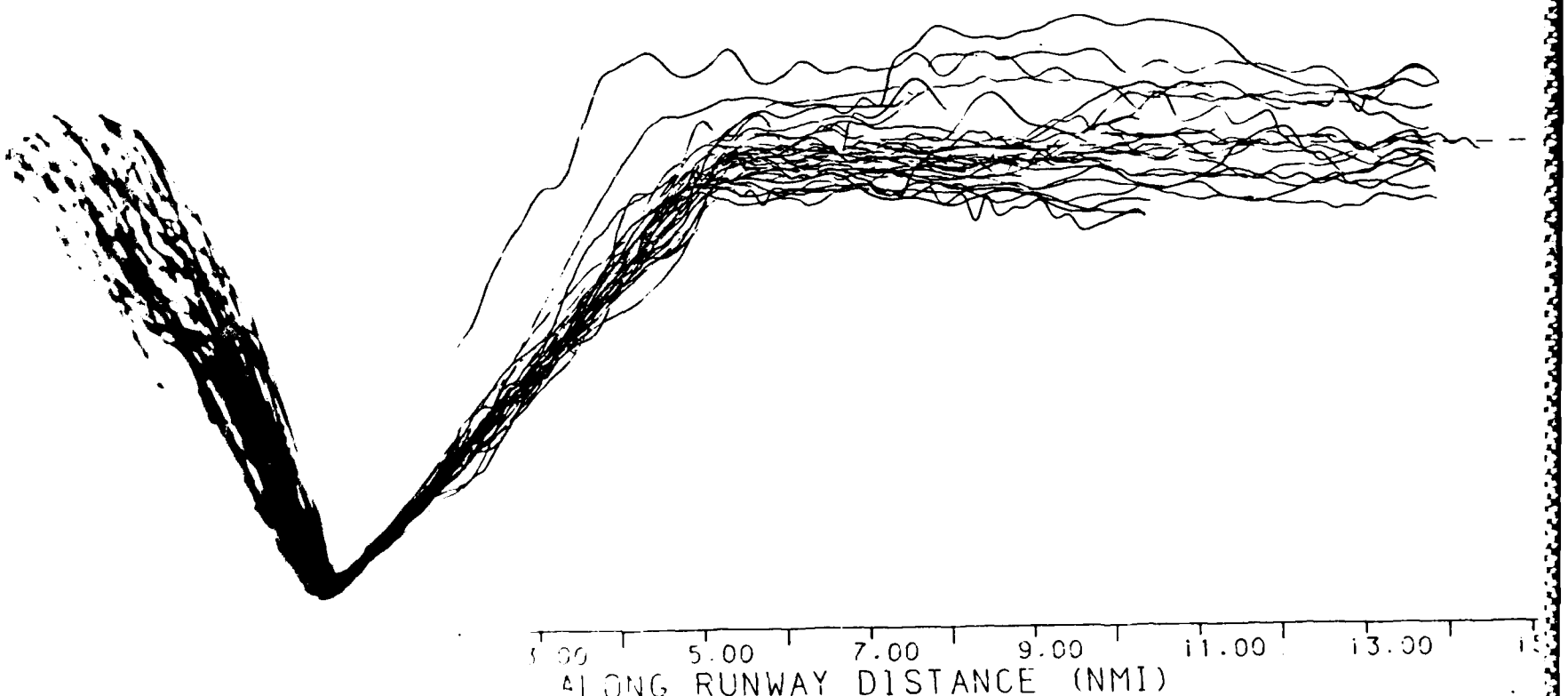
A[illegible] VALID RUNS

[illegible] PLOT

A[illegible] CRAFT: BOEING-727

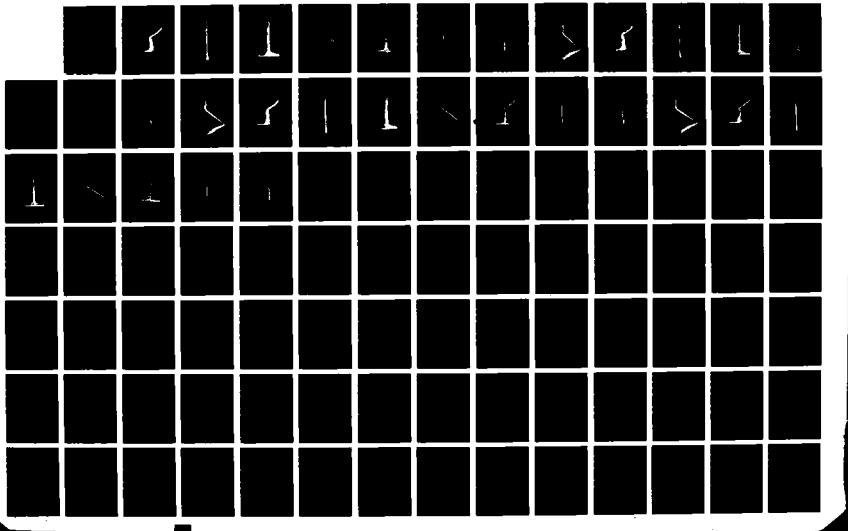
[illegible] MAP

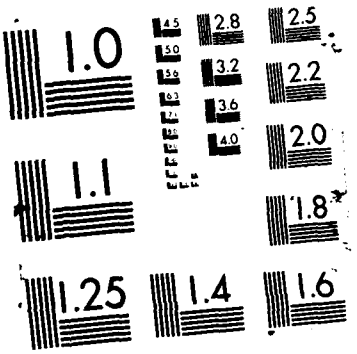
A[illegible] FAIR



AD-A185 523 BOEING 727 MLS (MICROWAVE LANDING SYSTEM) TERMINAL INSTRUMENT PROCEDURES (.. (U) FEDERAL AVIATION ADMINISTRATION TECHNICAL CENTER ATLANTIC CIT.. 2/3

UNCLASSIFIED E J PUGACZ MAY 87 DOT/FAA/CT-TN87/9 F/G 17/7.3 NL

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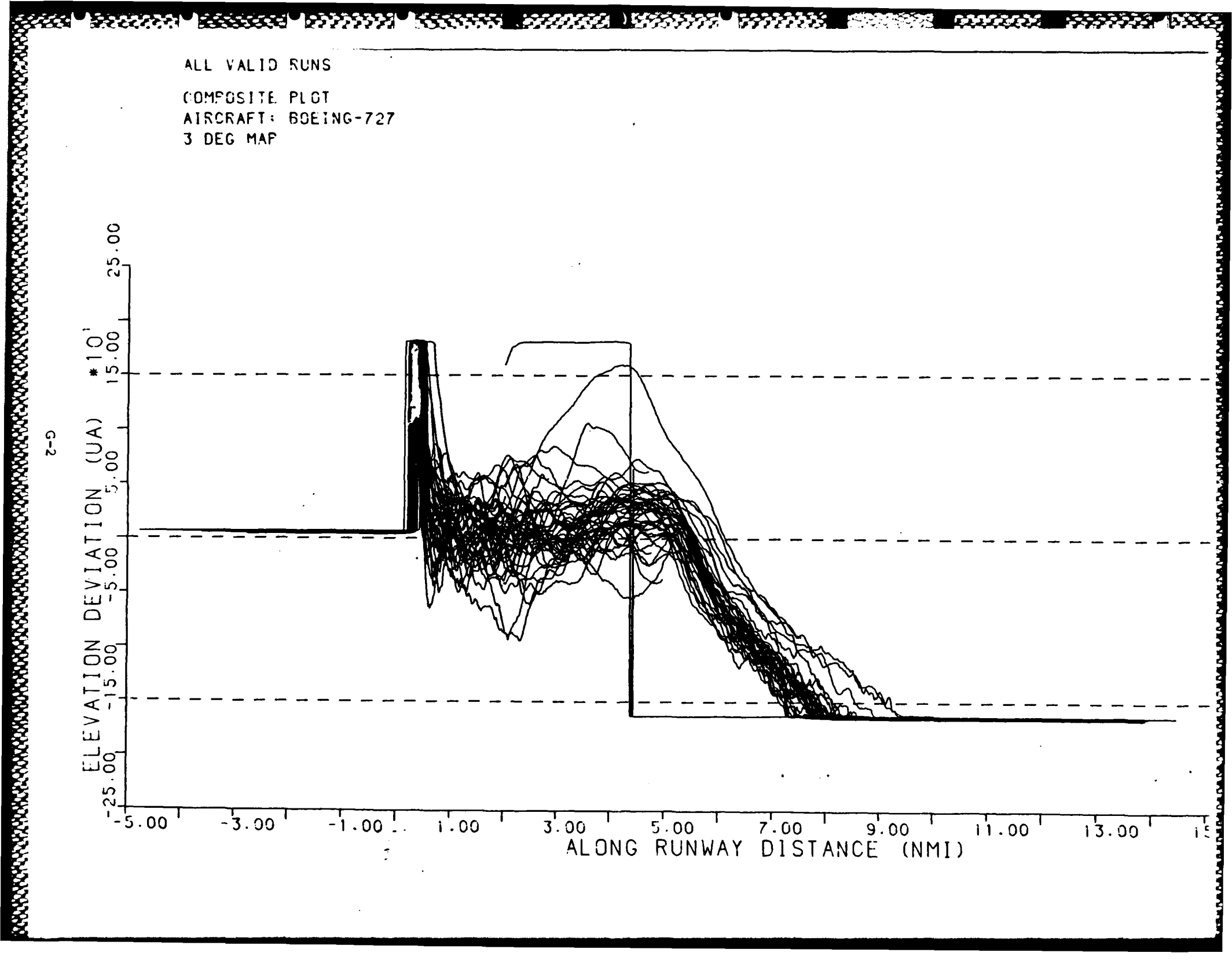
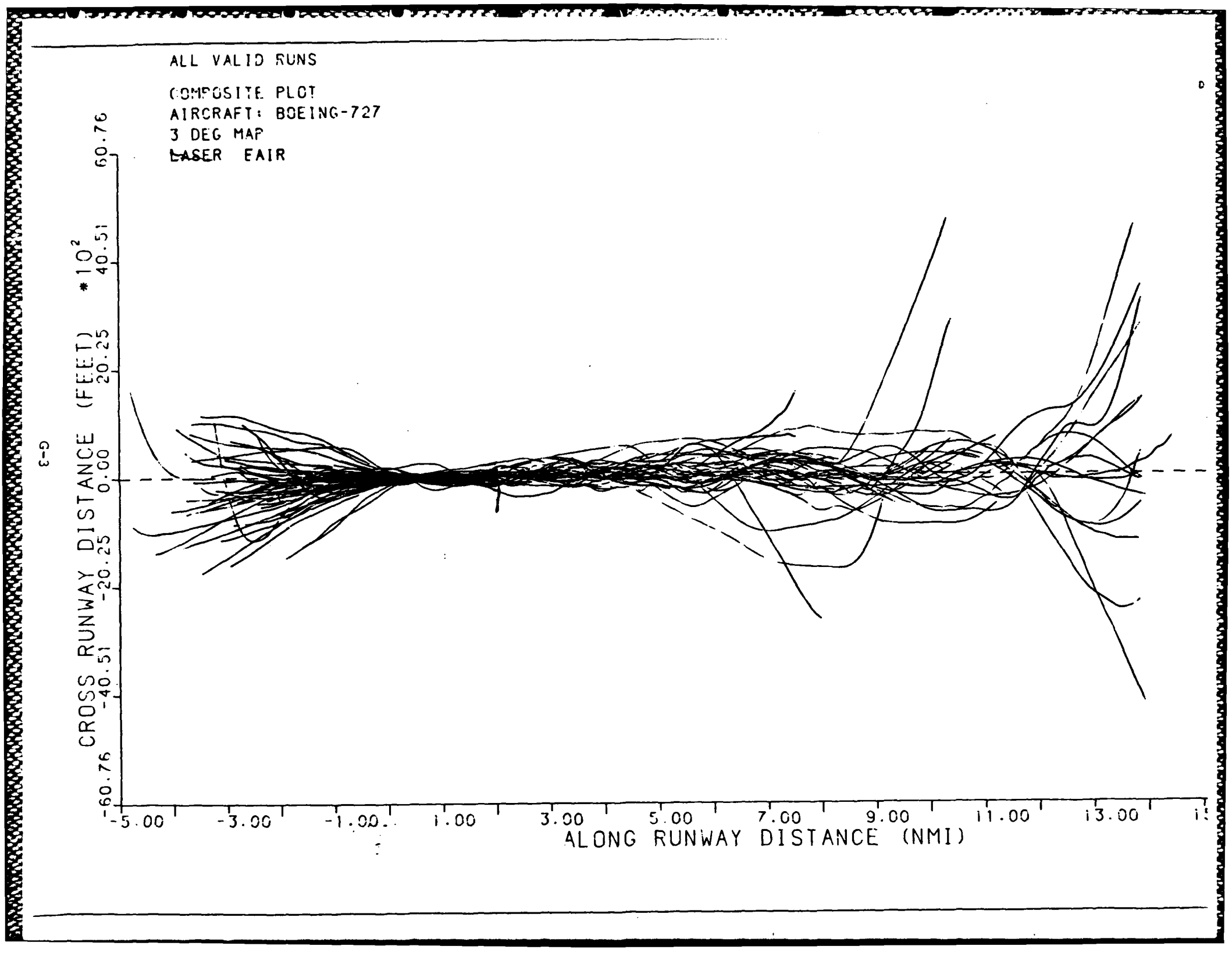
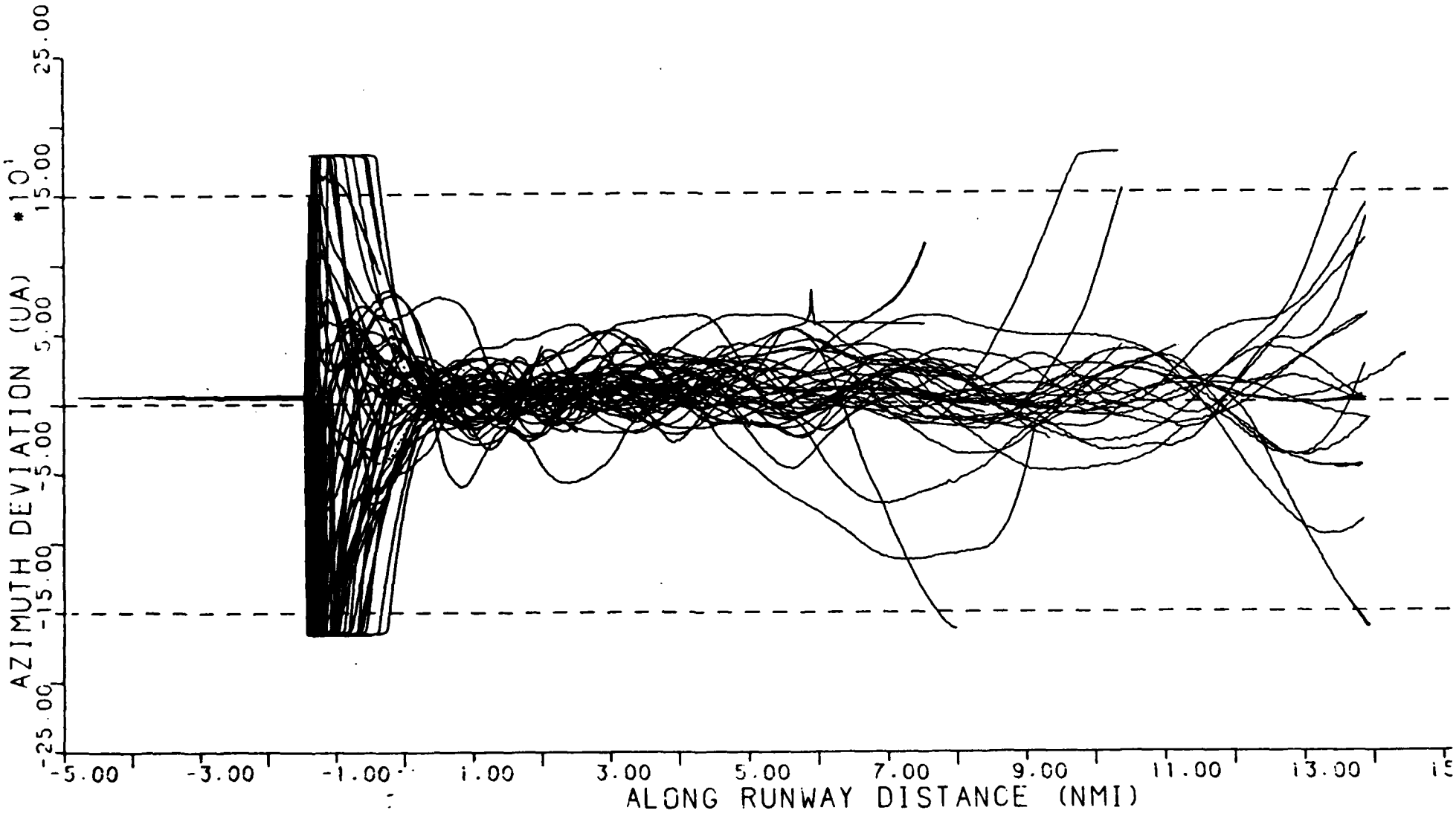
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6

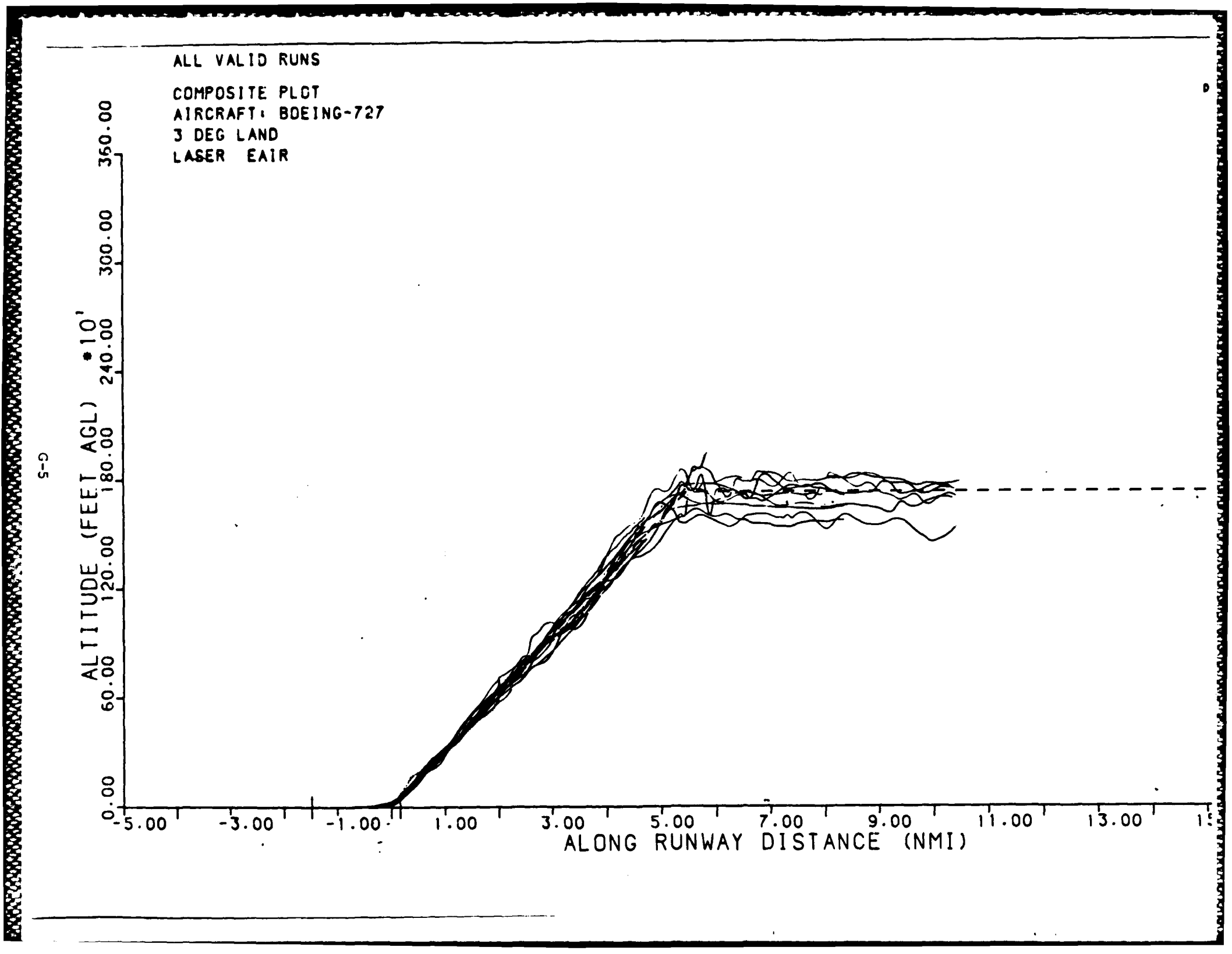

ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG MAP
ELEVATION DEVIATION (UA) *10'
25.00
15.00
5.00
-5.00
-15.00
-25.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)


ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG MAP
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

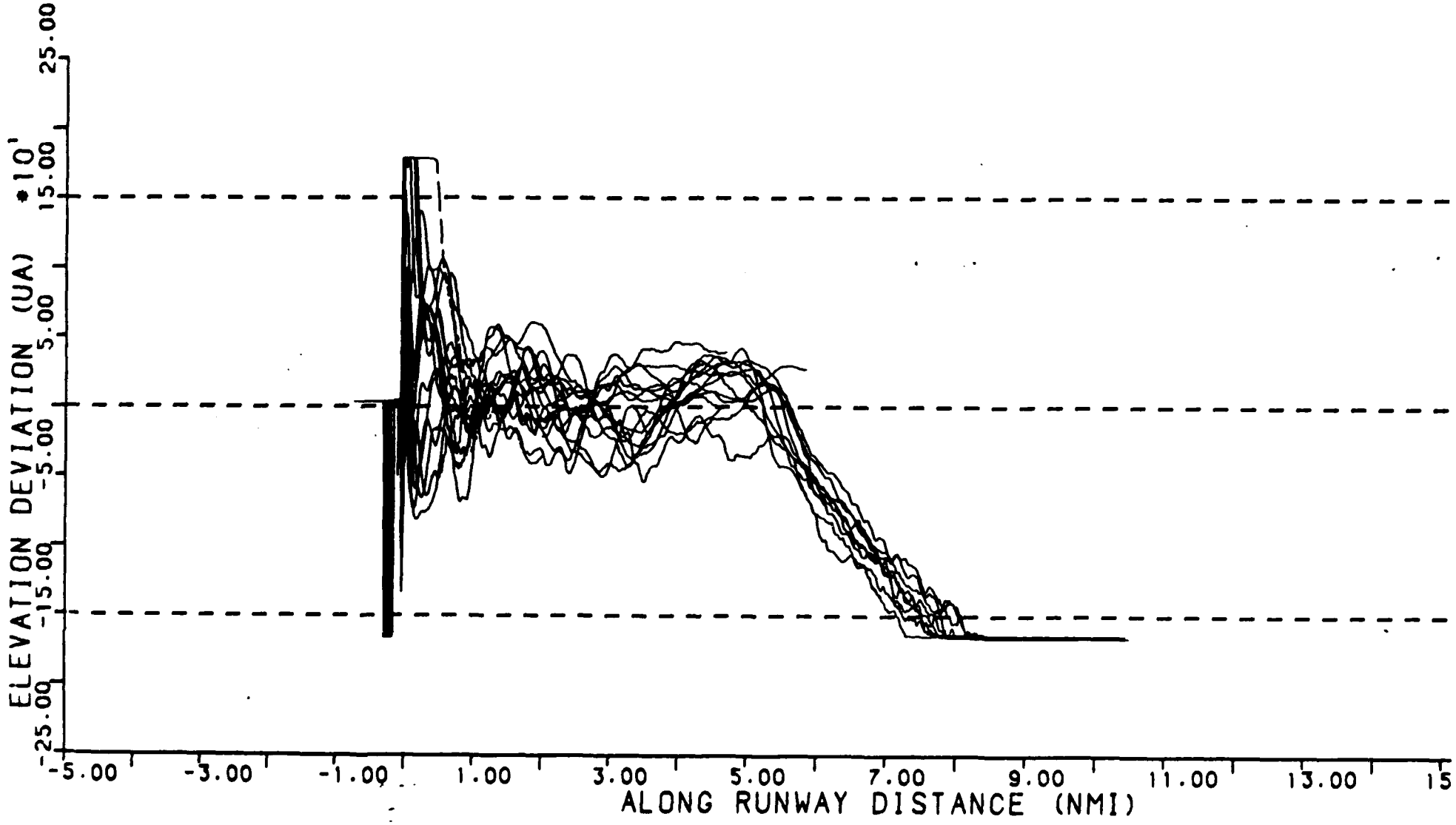
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG MAP

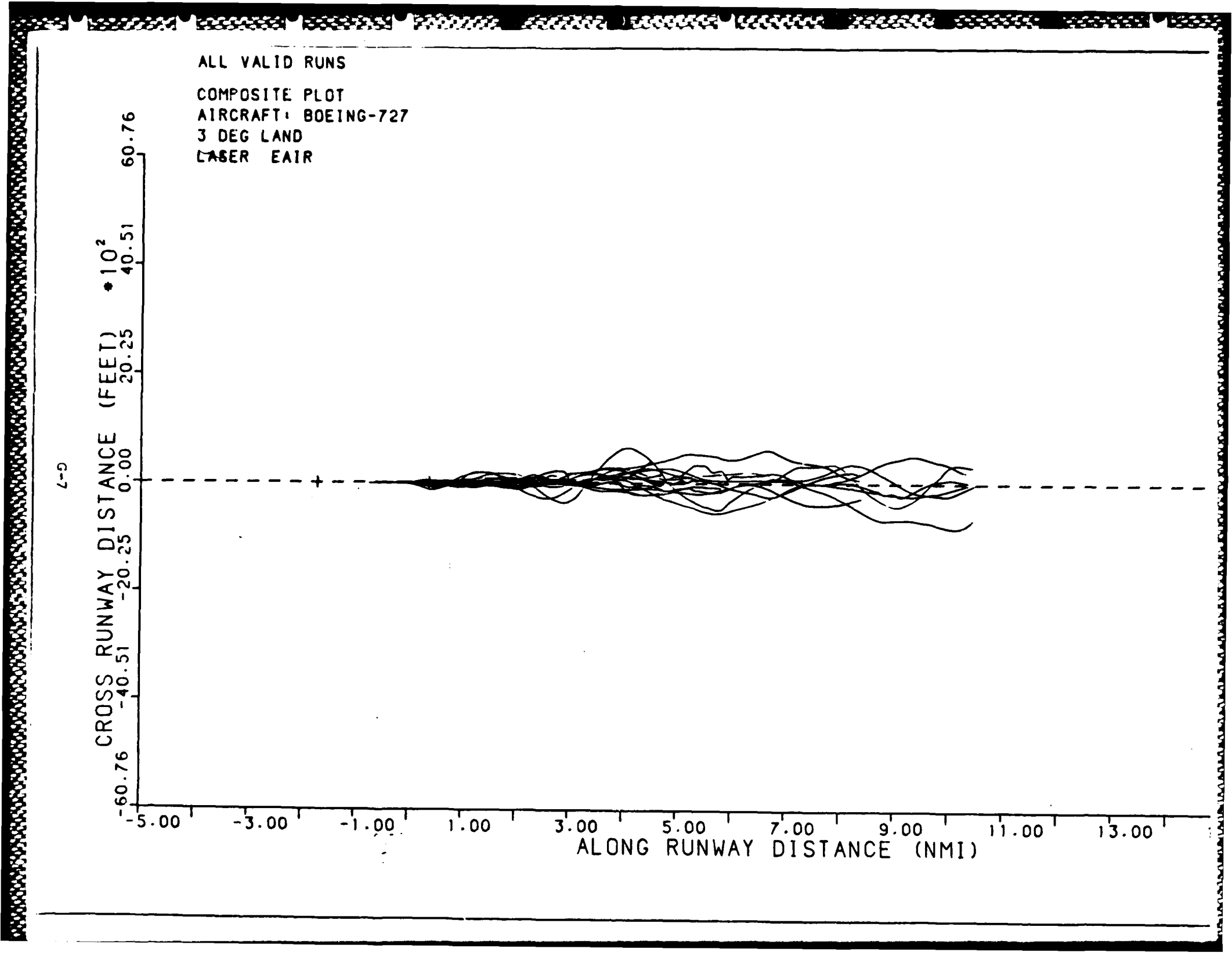



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND
LASER EAIR
ALTITUDE (FEET AGL) *10'
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

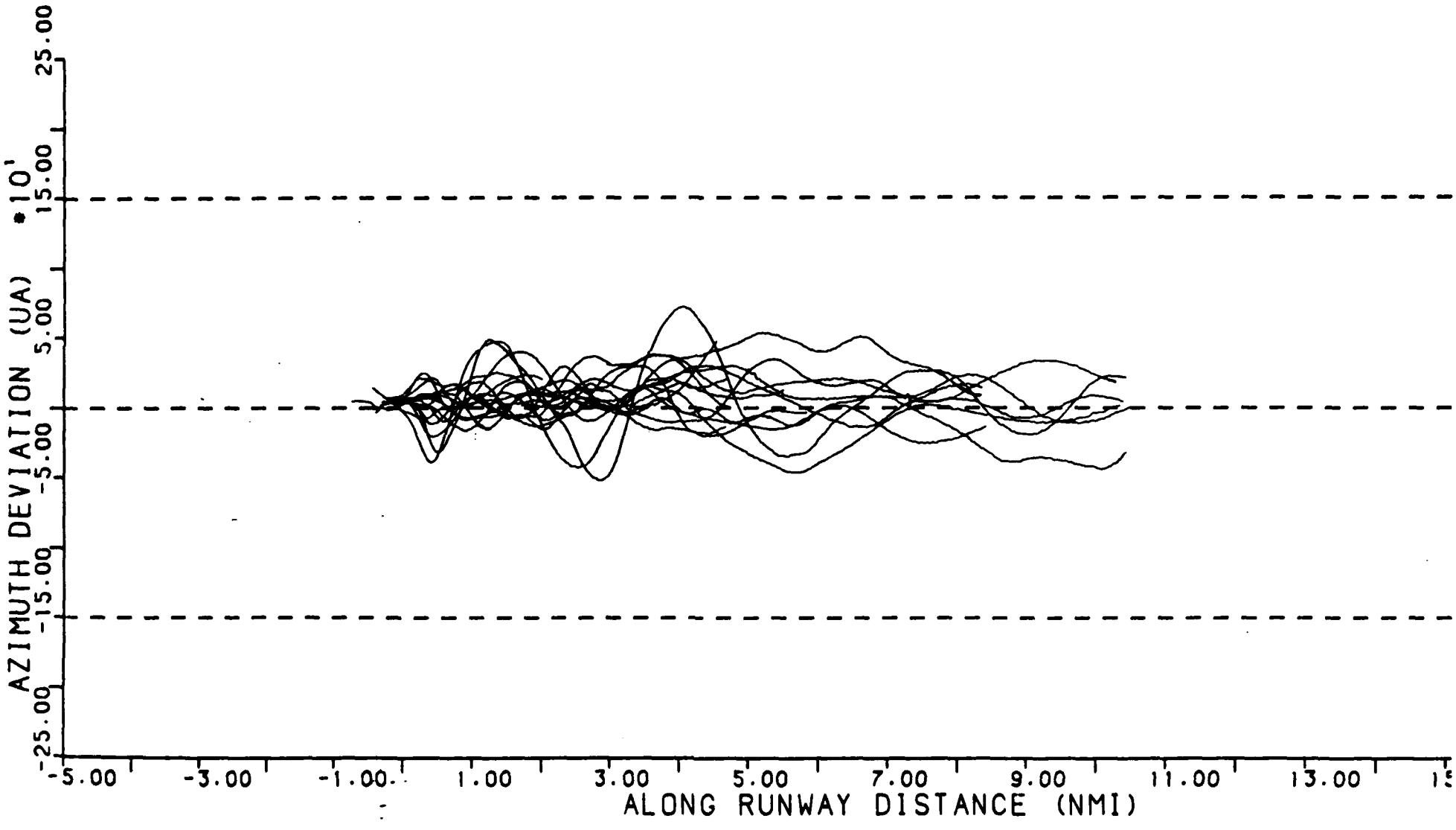
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND

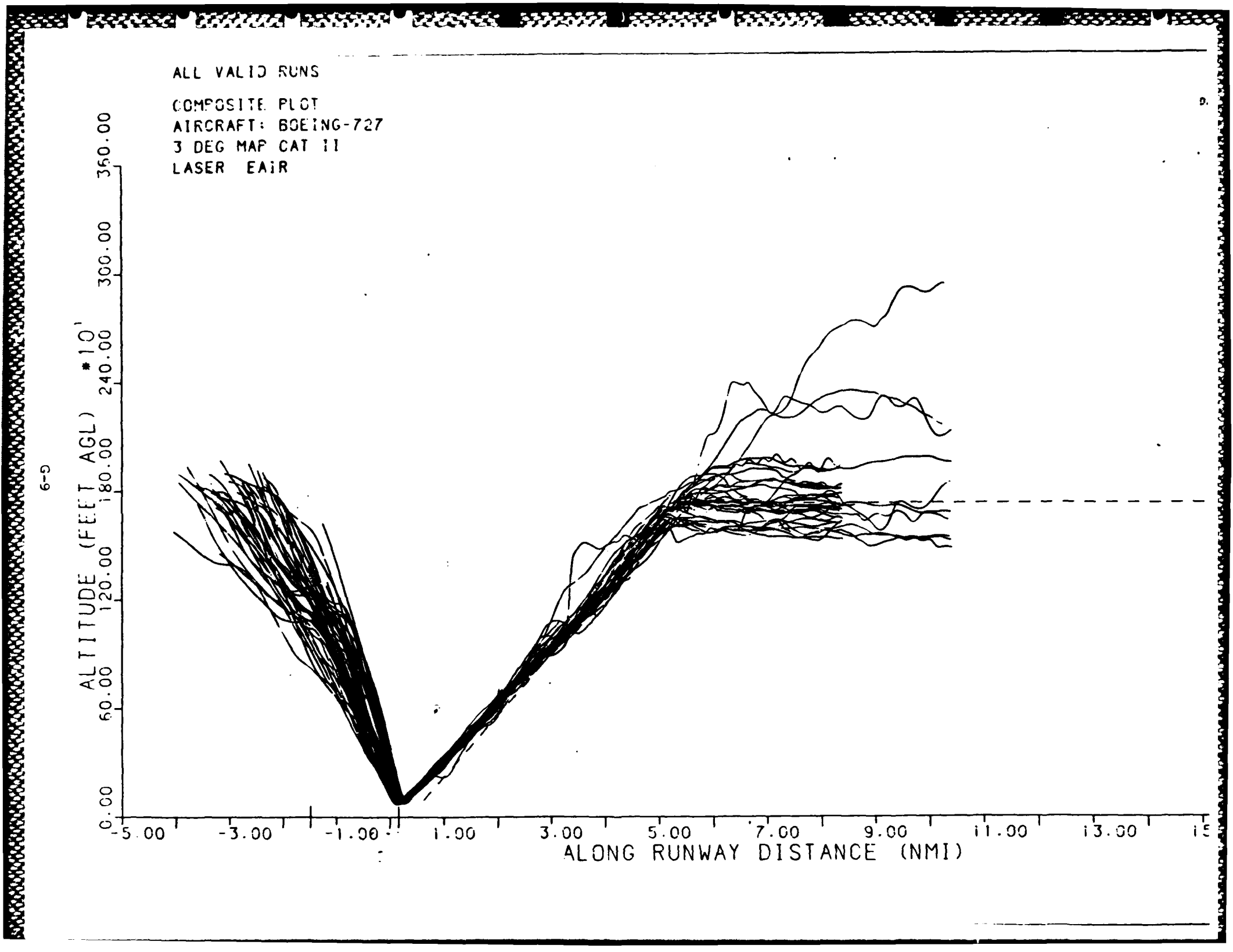


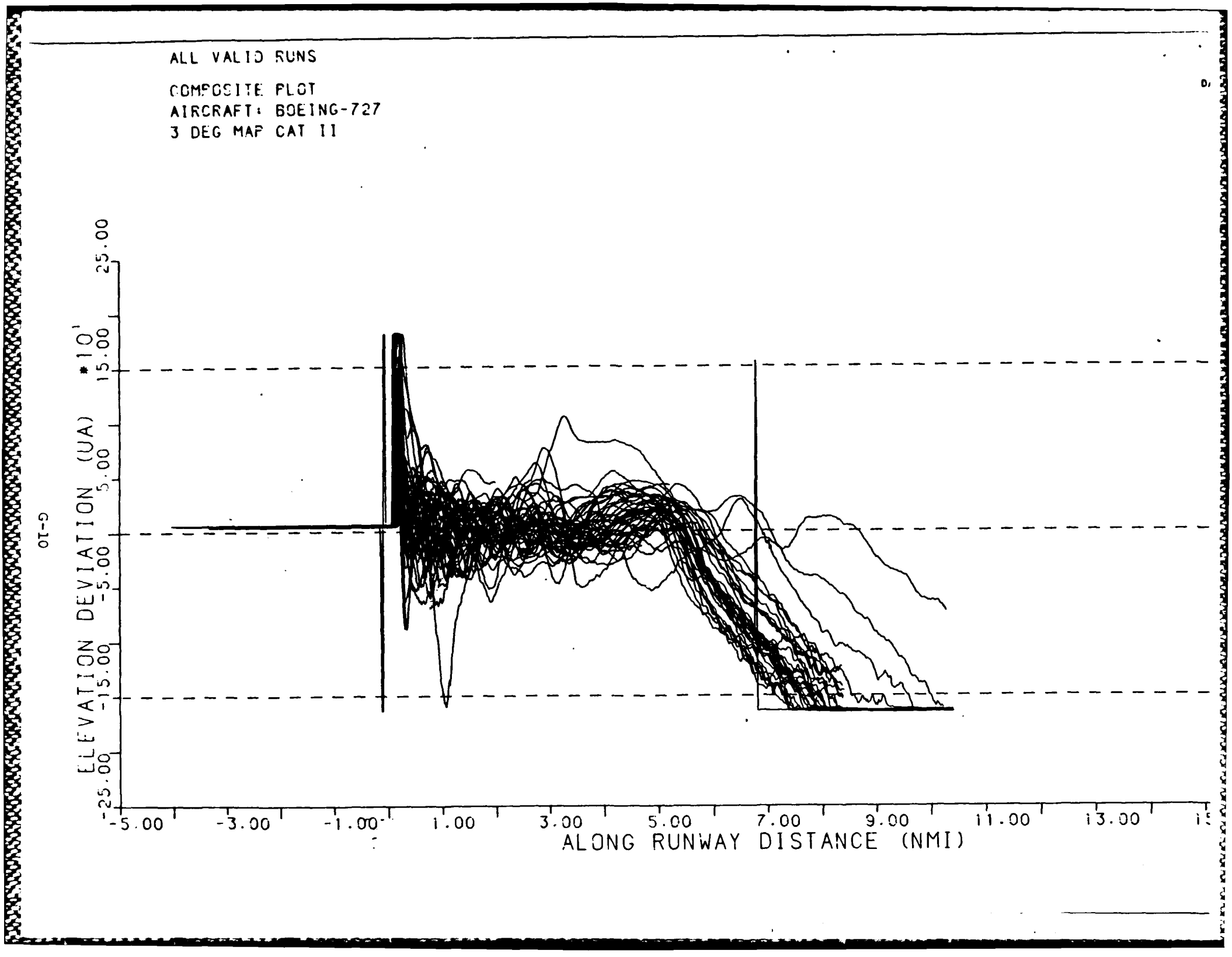

ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

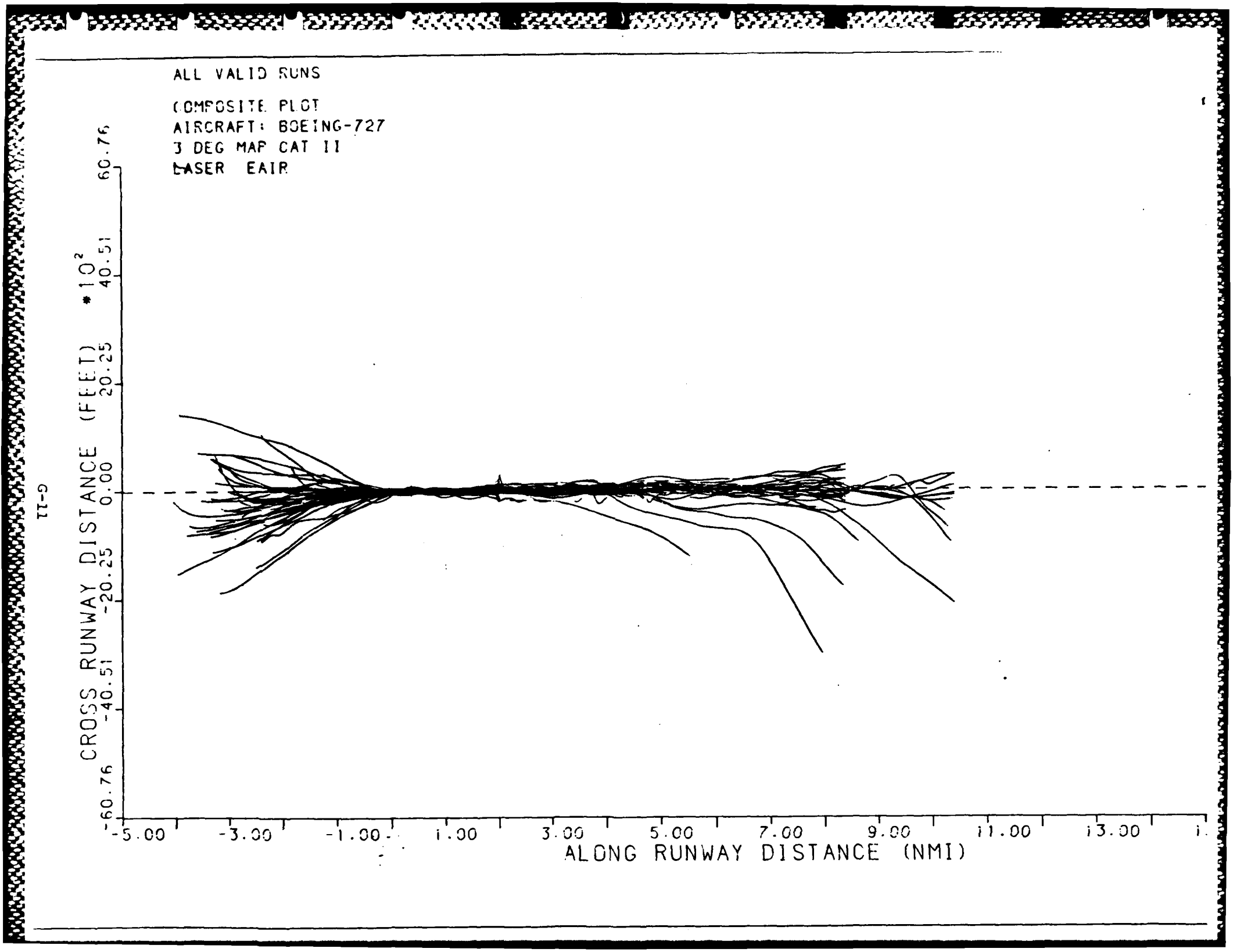
ALL VALID RUNS

COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND



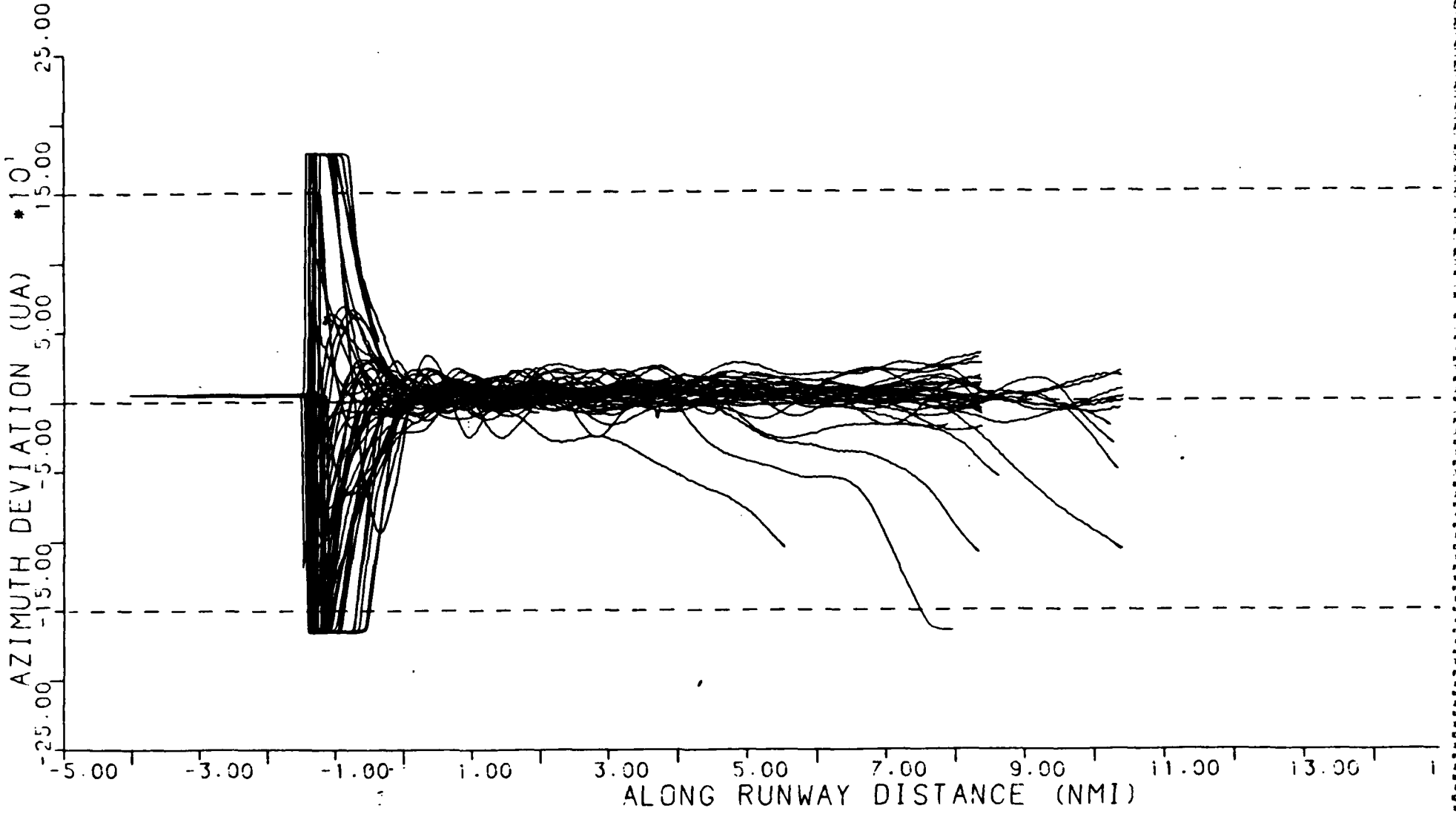

ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG MAP CAT II
LASER EAIR
ALTITUDE (FEET AGL) *10'
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

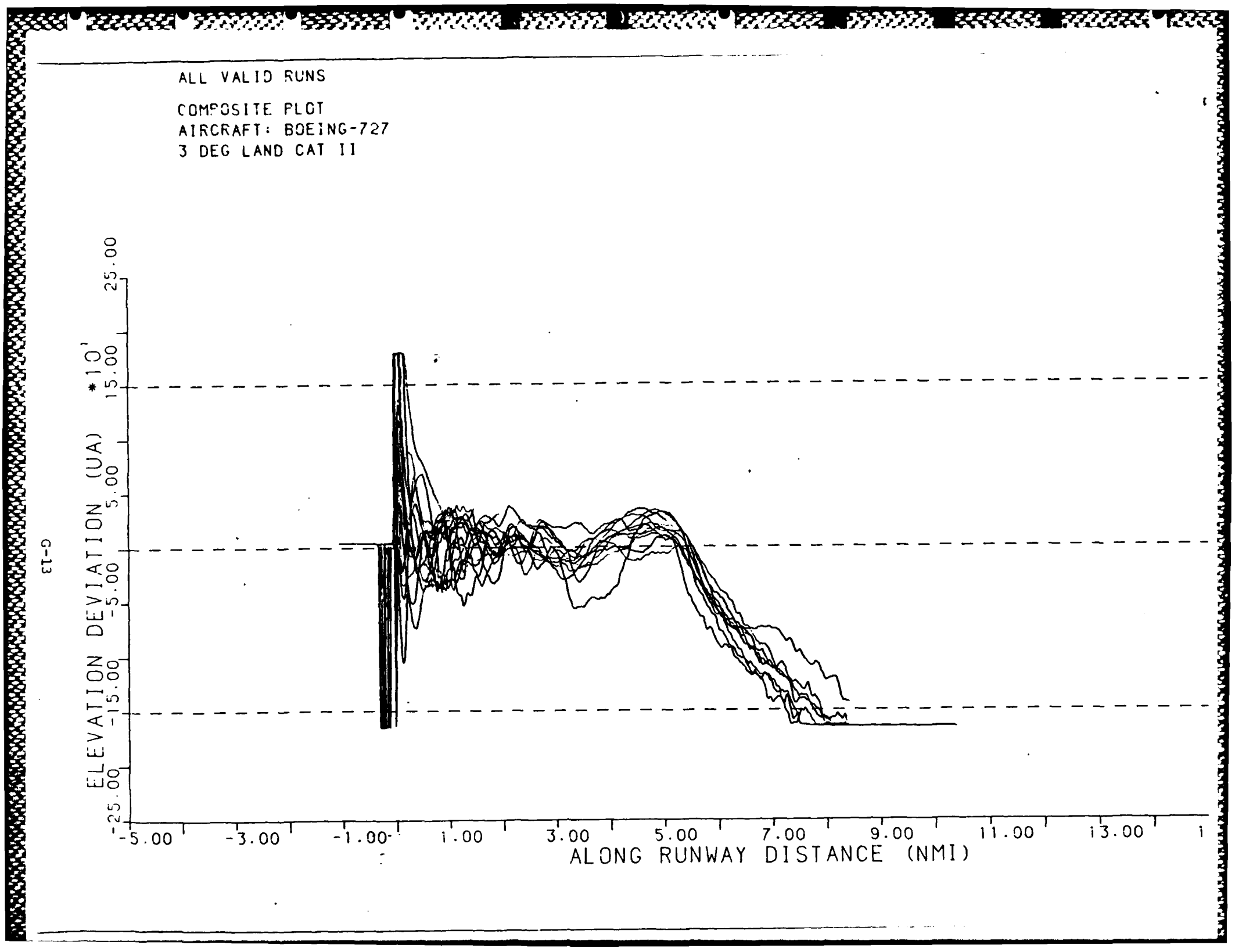

ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG MAP CAT II
ELEVATION DEVIATION (UA) *10'
25.00
15.00
5.00
-5.00
-15.00
-25.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

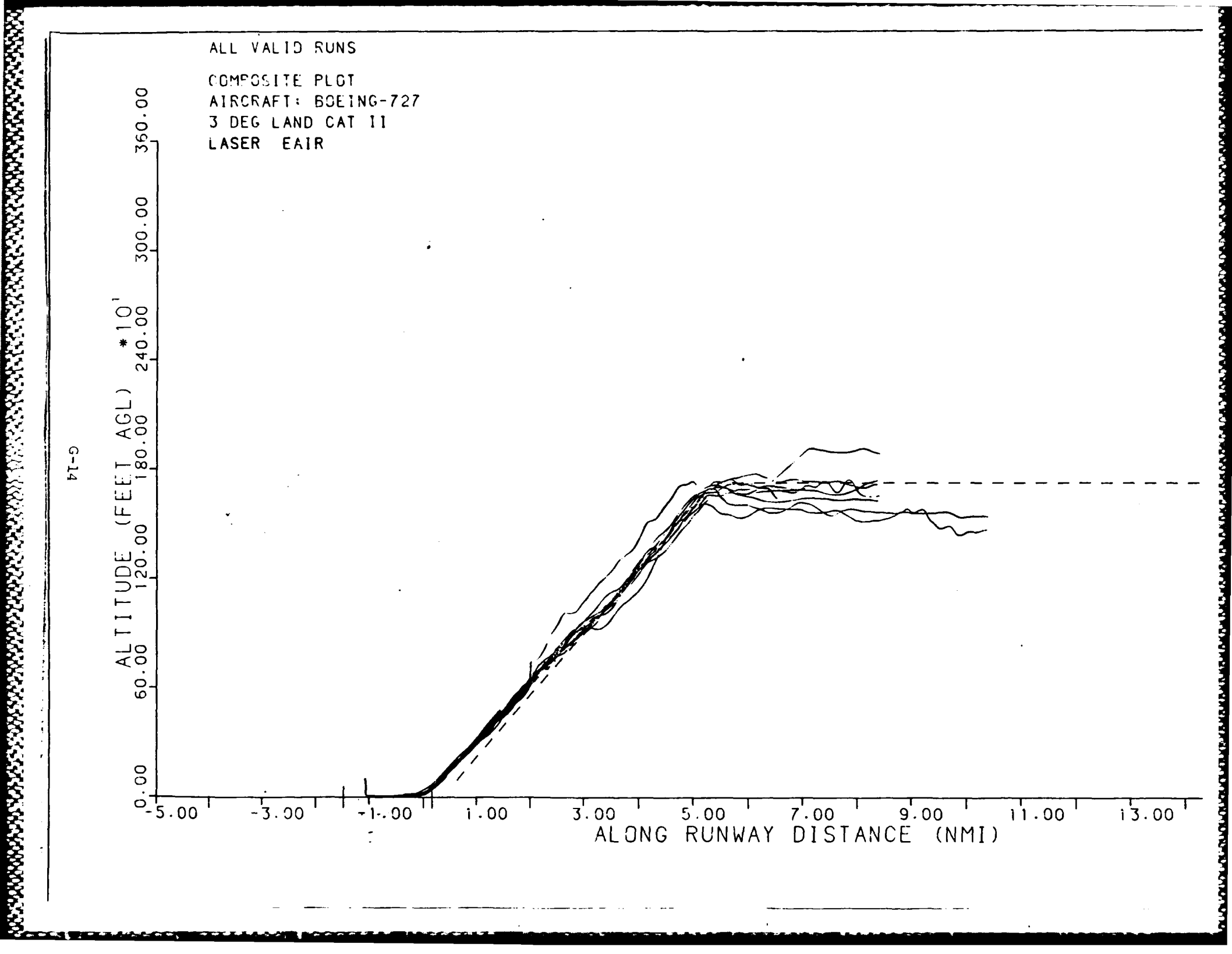

ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG MAP CAT II
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

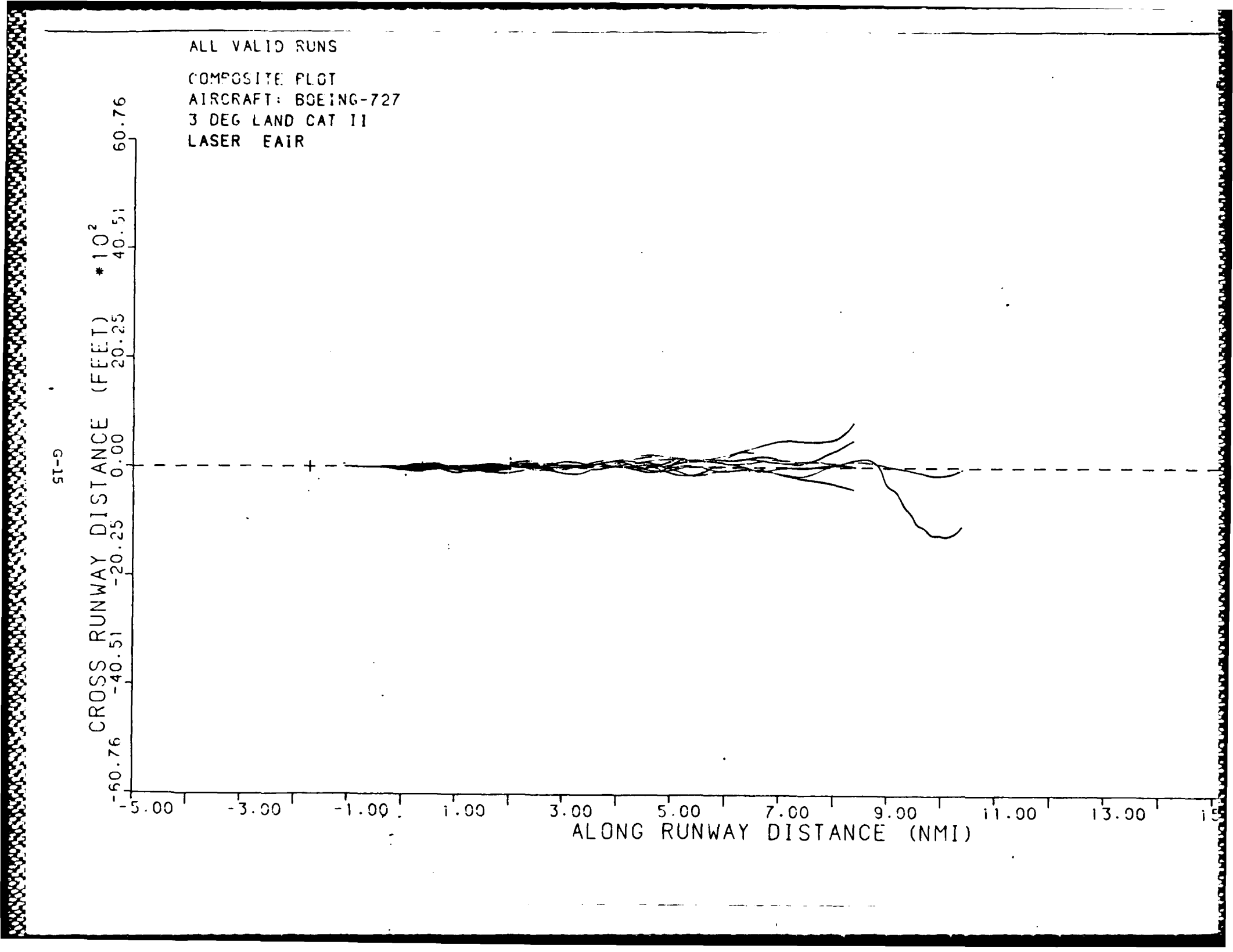
ALL VALID RUNS

COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG MAP CAT II



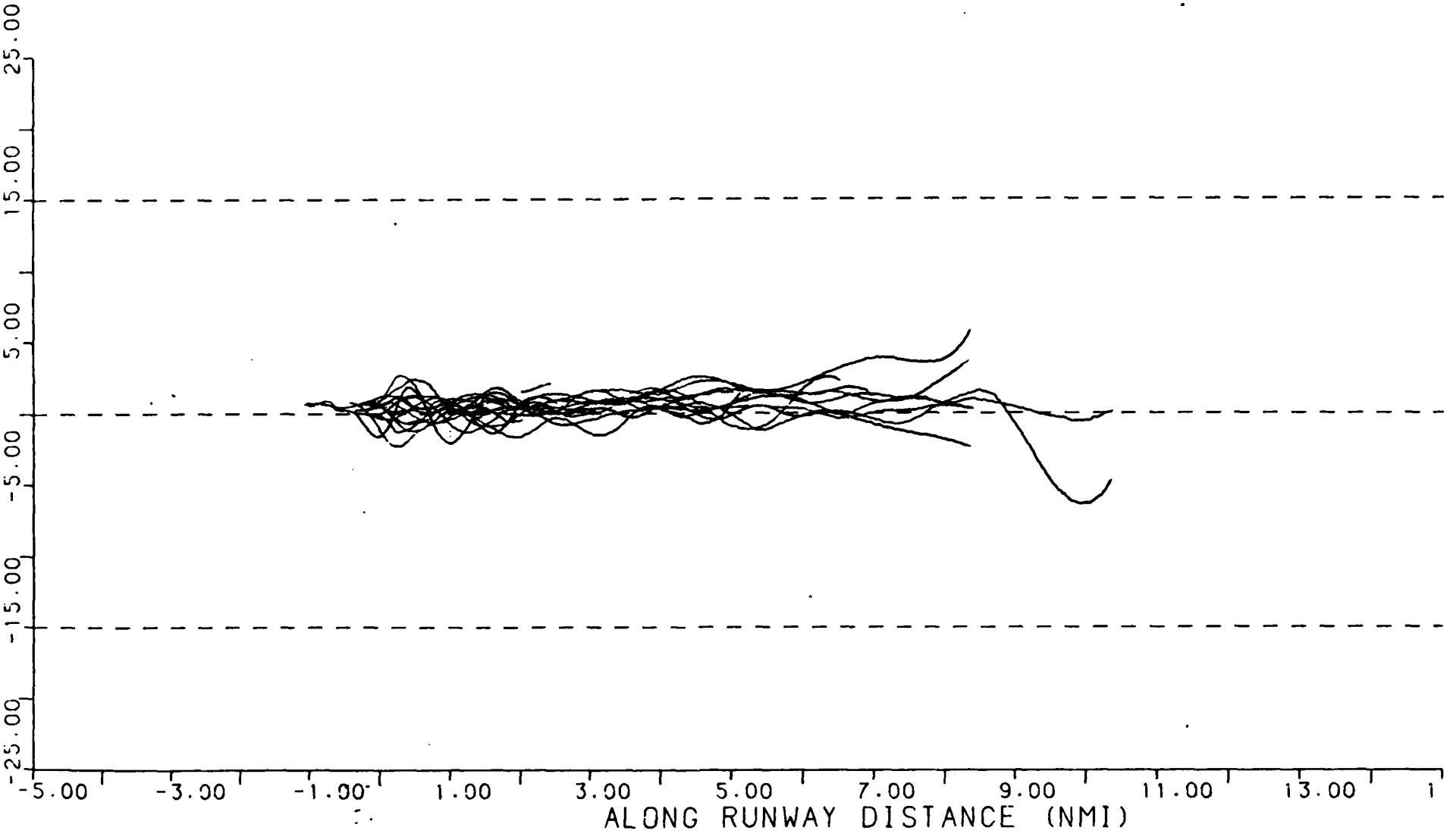

ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND CAT II
ELEVATION DEVIATION (UA) *10'
25.00
15.00
5.00
-5.00
-15.00
-25.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

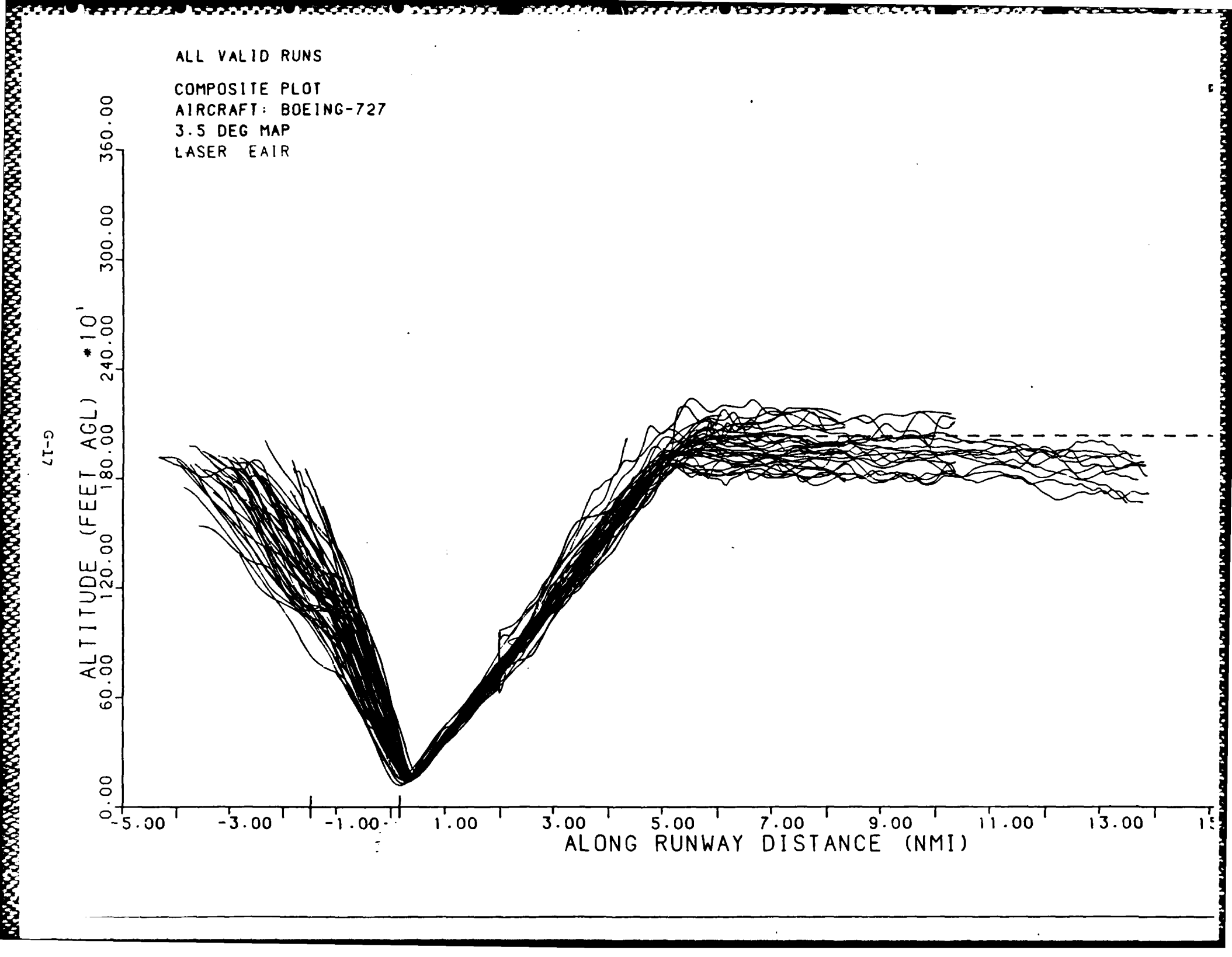

ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND CAT II
LASER EAIR
ALTITUDE (FEET AGL) *10¹
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)


ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND CAT II
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

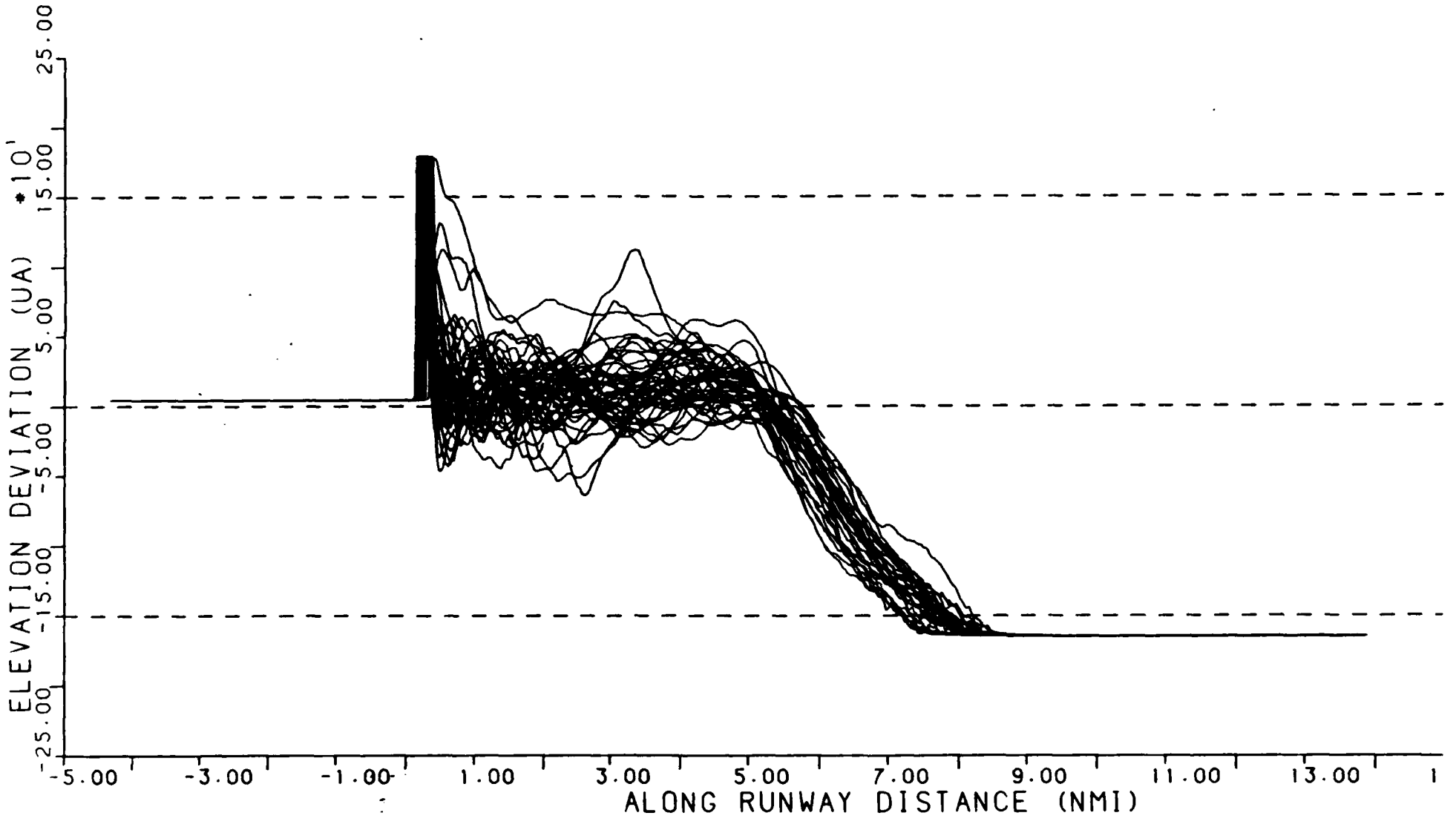
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3 DEG LAND CAT II

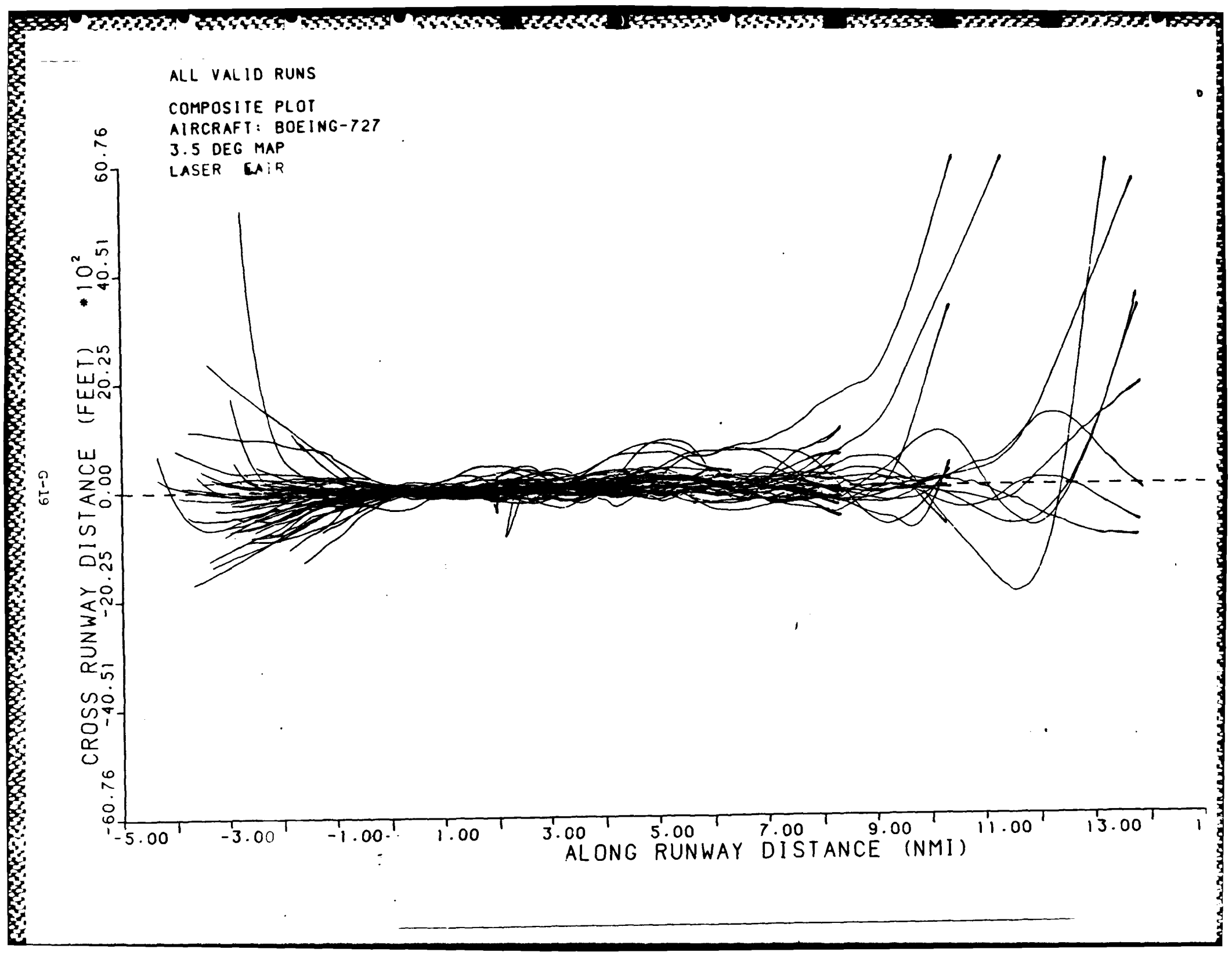



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG MAP
LASER EAIR
ALTITUDE (FEET AGL) *10¹
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

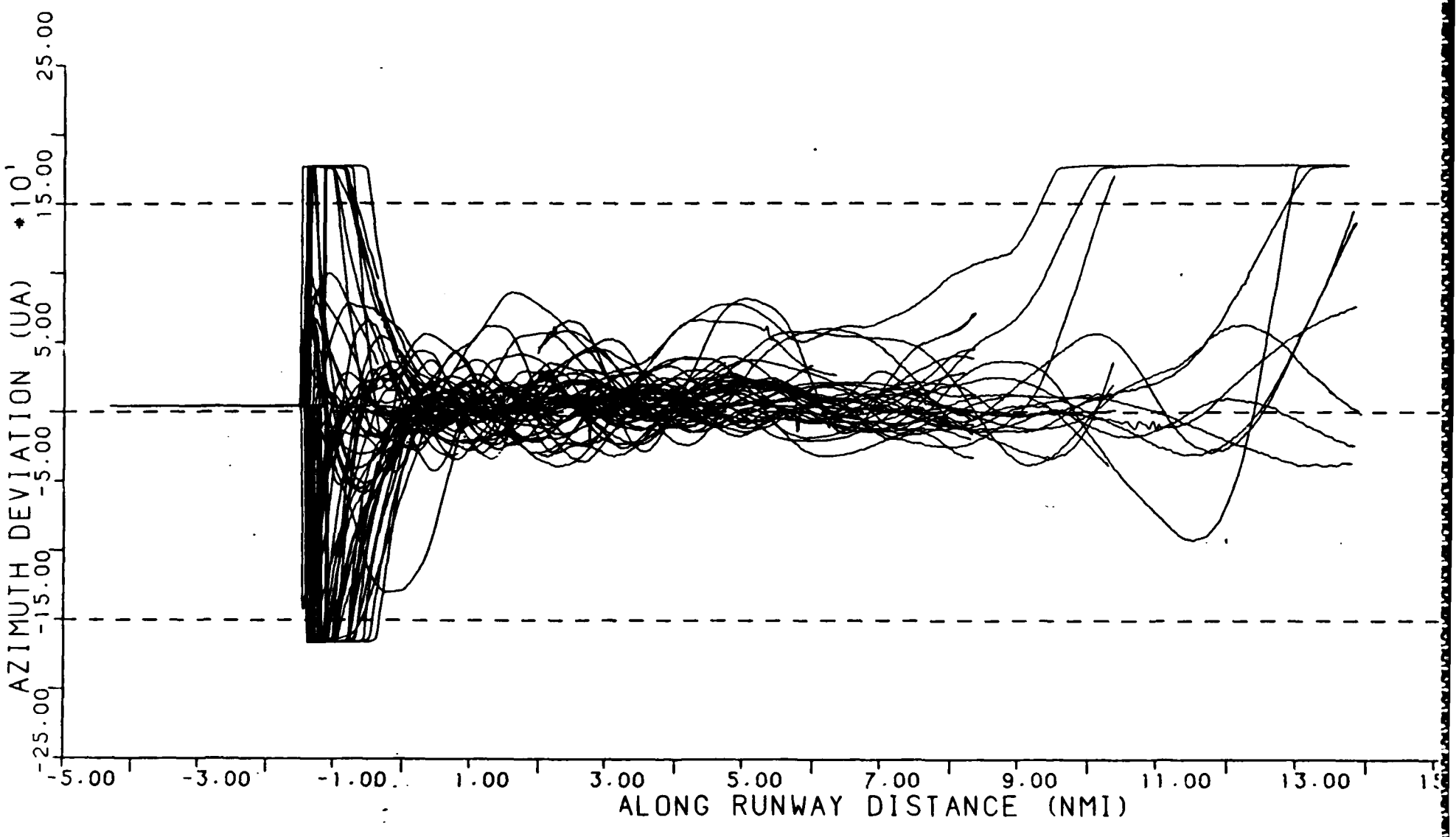
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG MAP

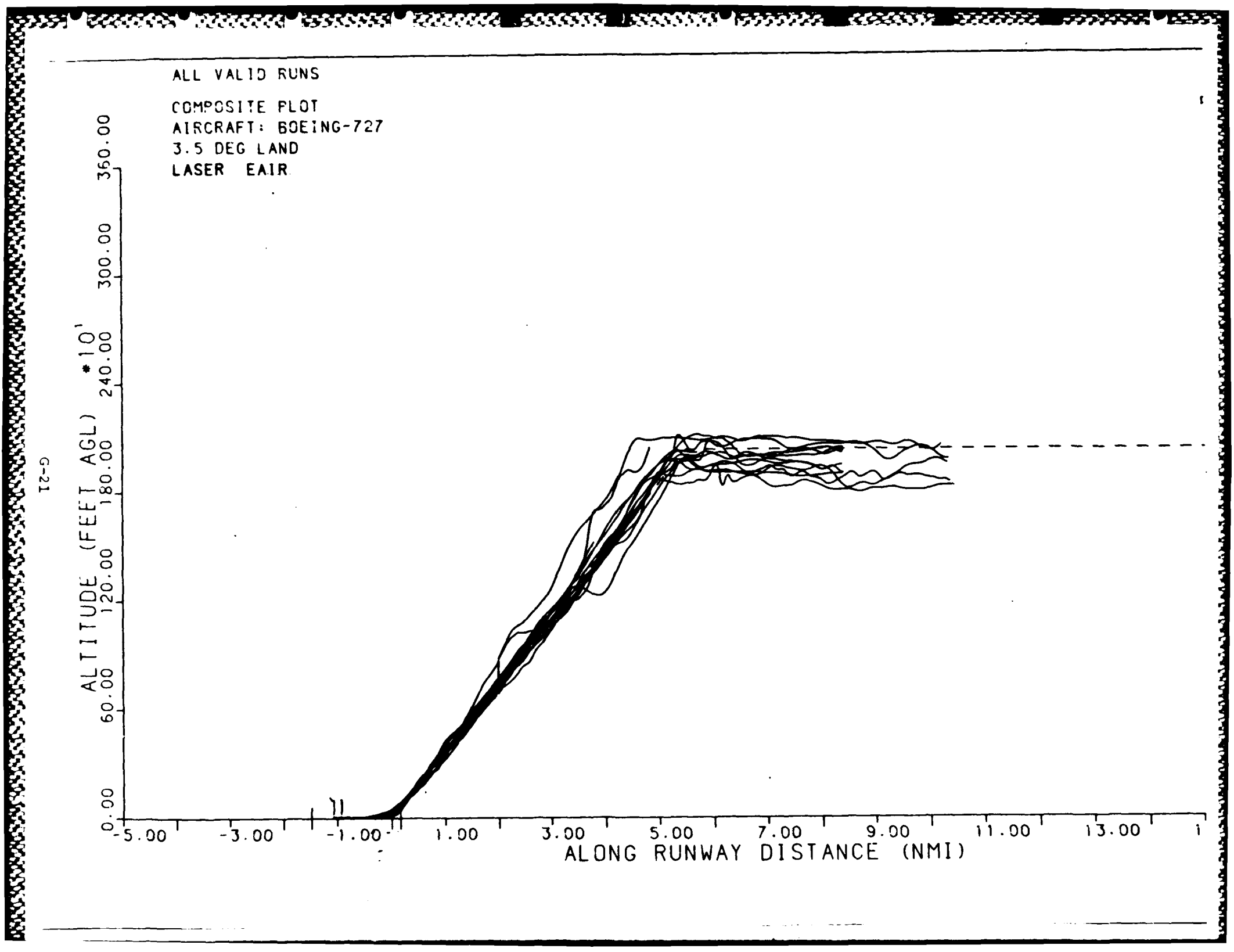



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG MAP
LASER
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

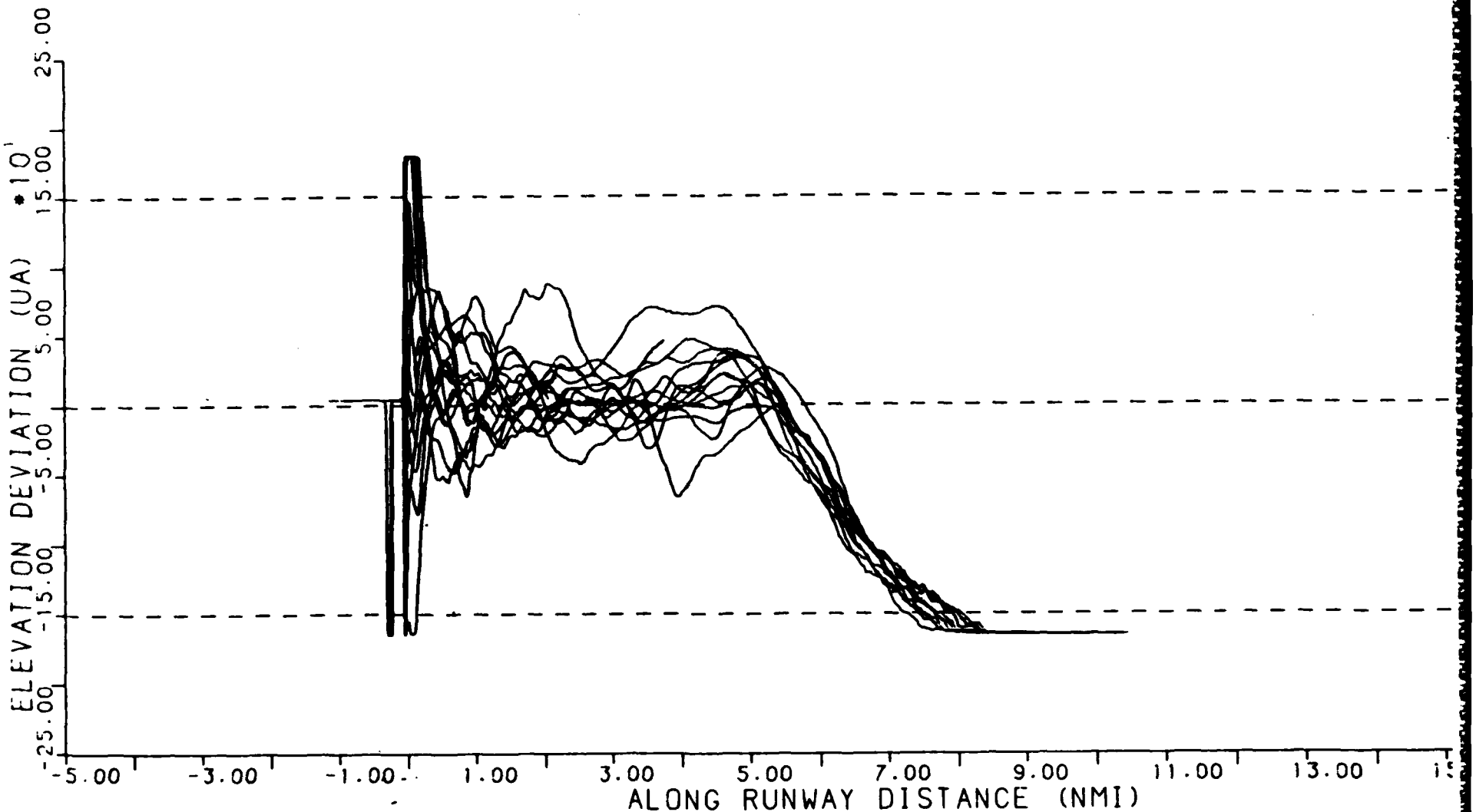
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG MAP

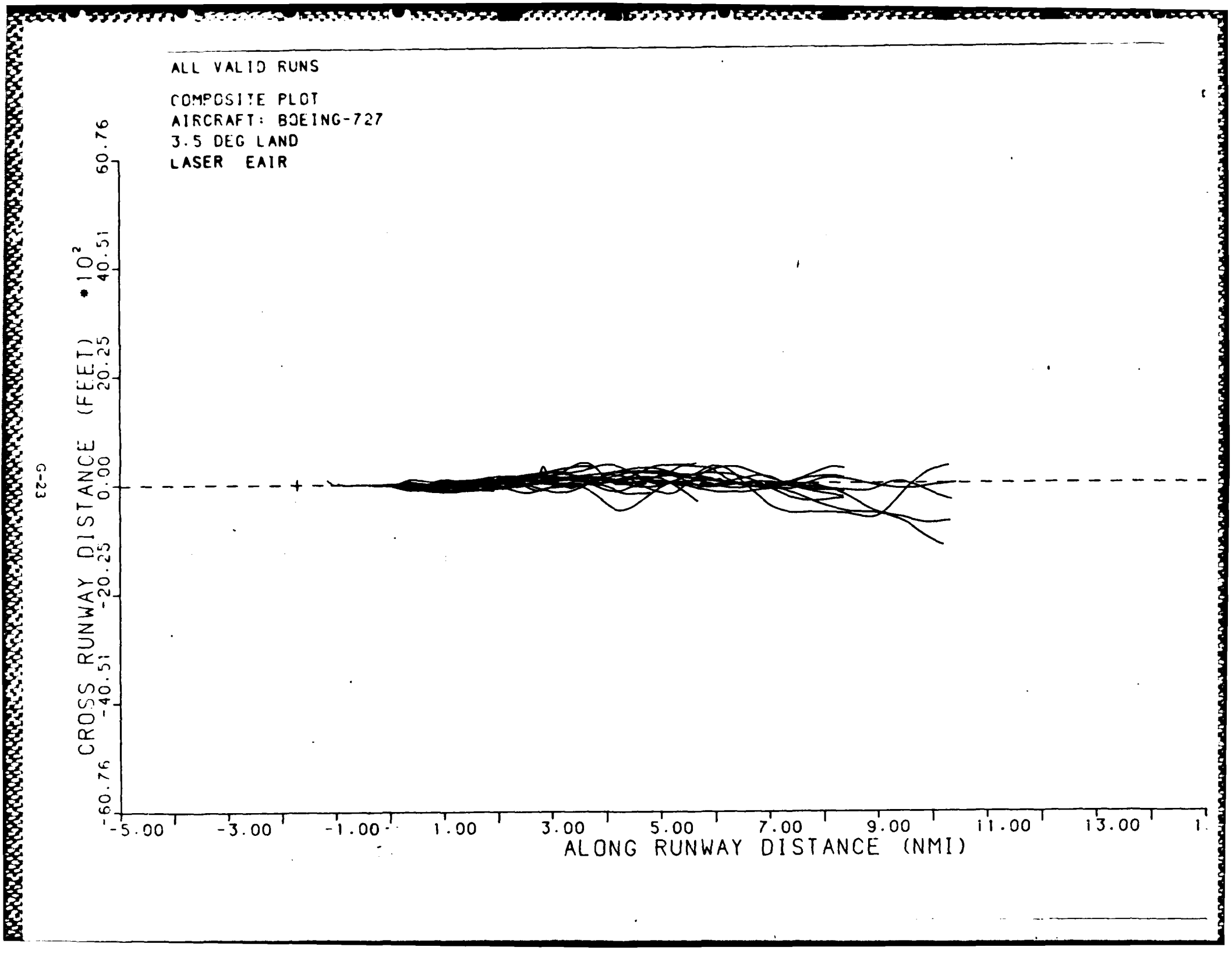



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG LAND
LASER EAIR
ALTITUDE (FEET AGL) *10'
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

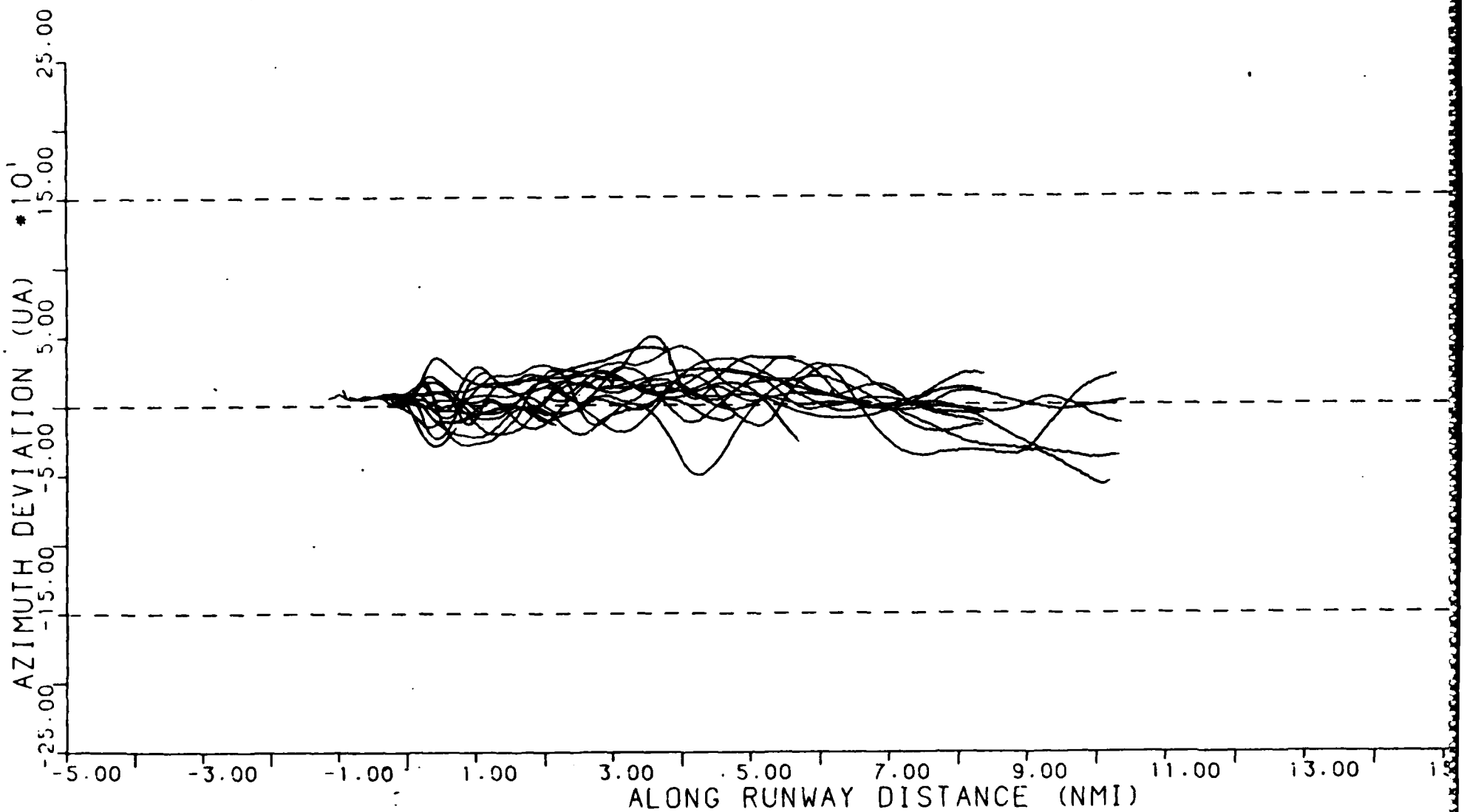
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG LAND

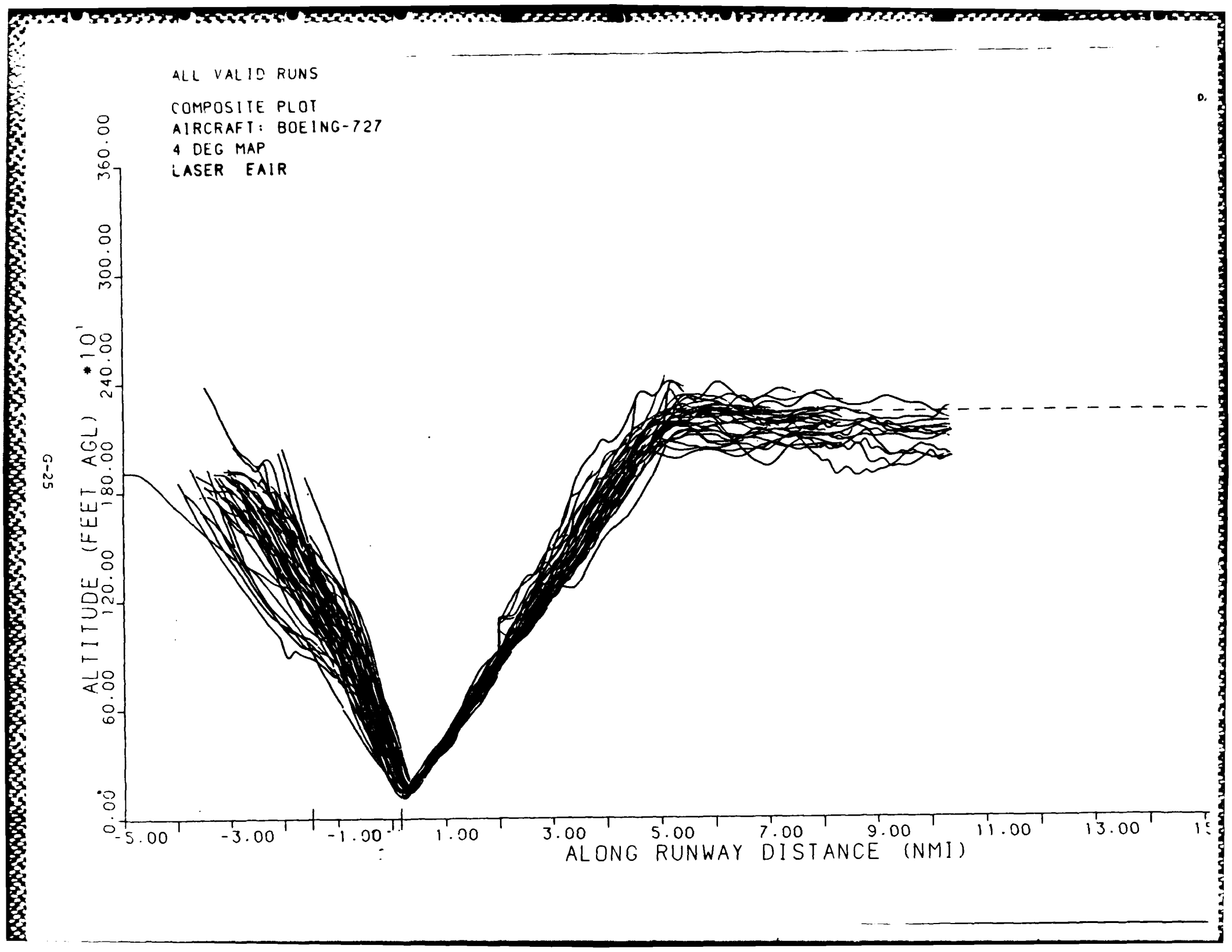



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG LAND
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

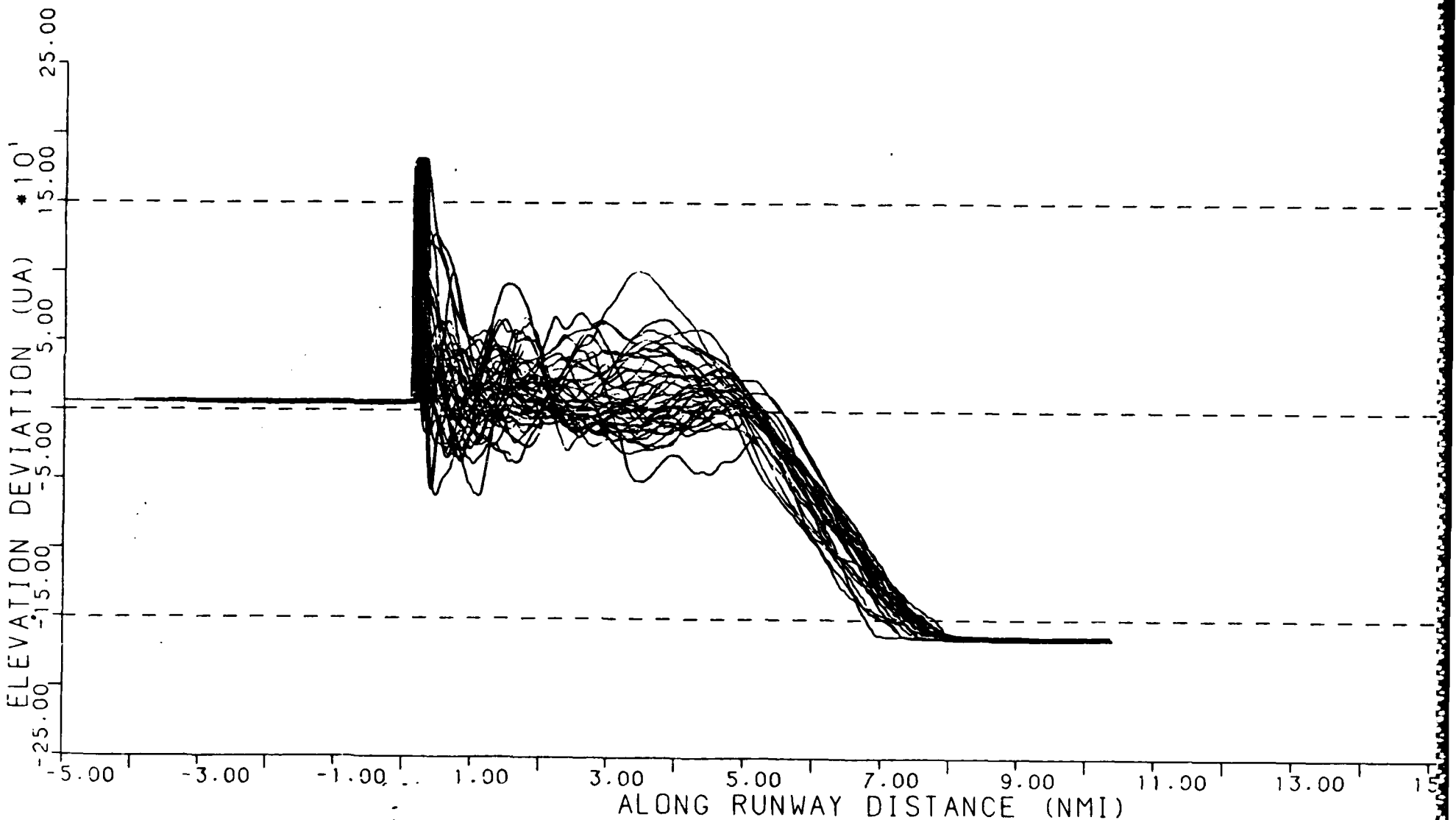
COMPOSITE PLOT
AIRCRAFT: BOEING-727
3.5 DEG LAND

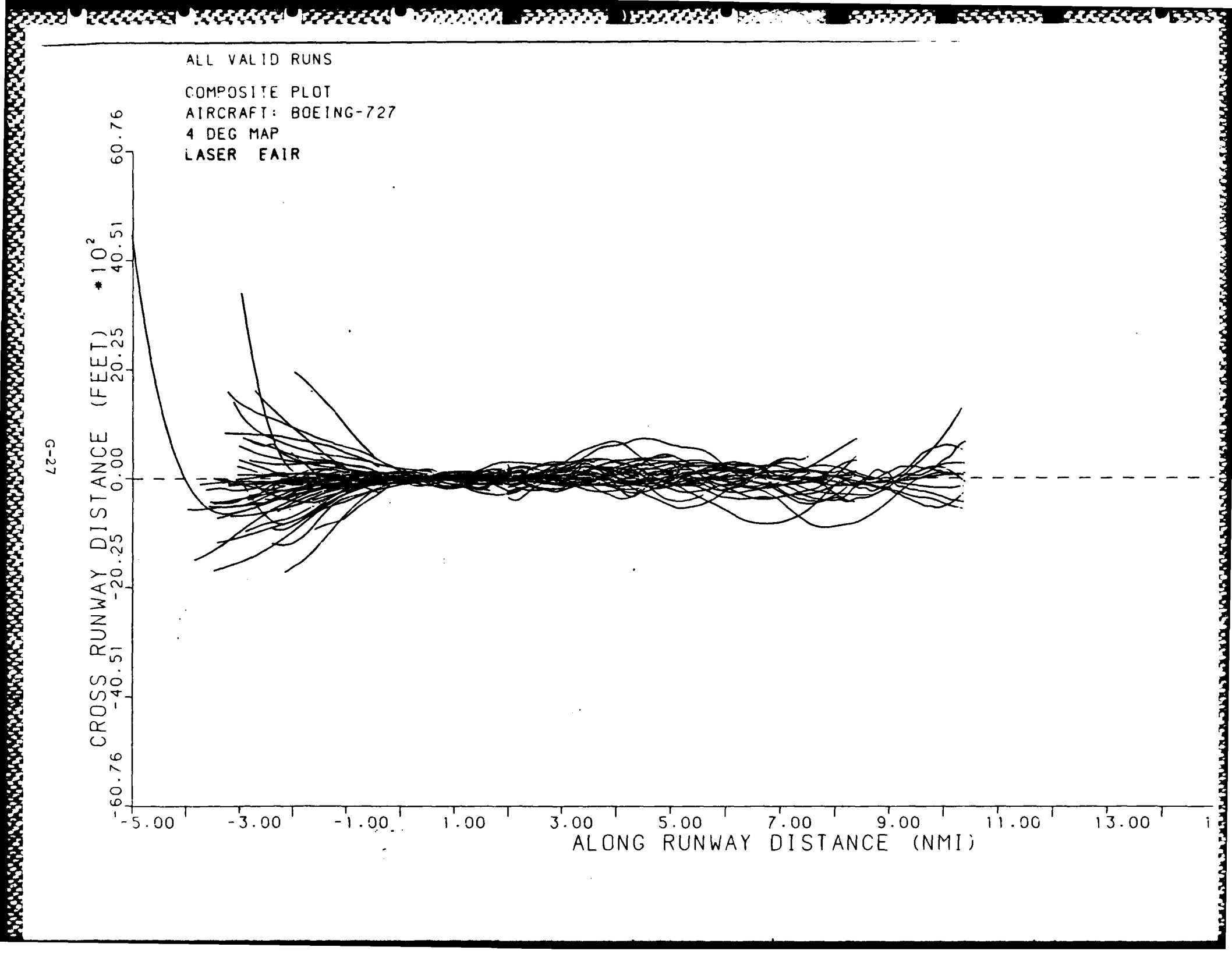



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG MAP
LASER EAIR
ALTITUDE (FEET AGL) *10'
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

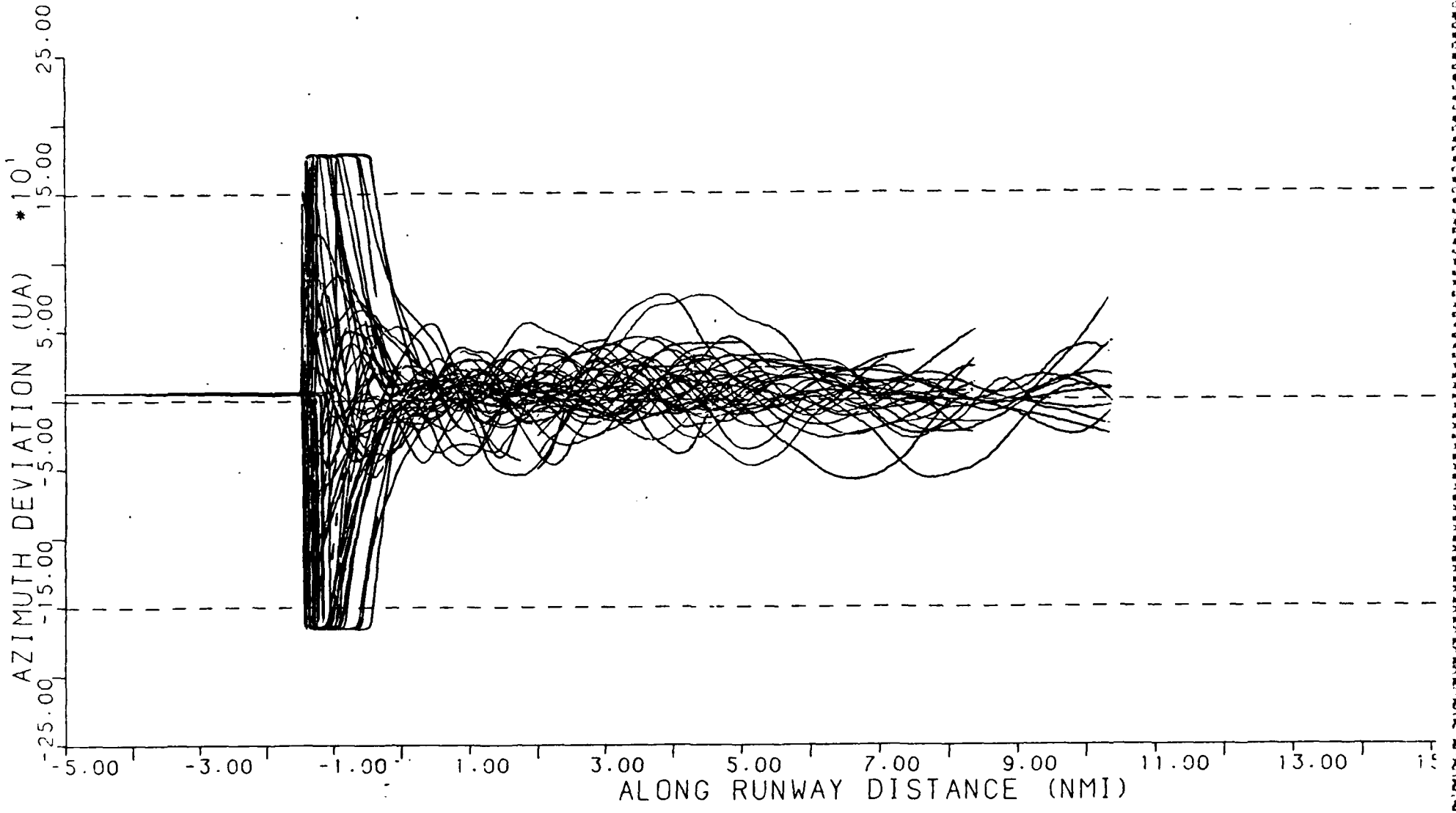
COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG MAP

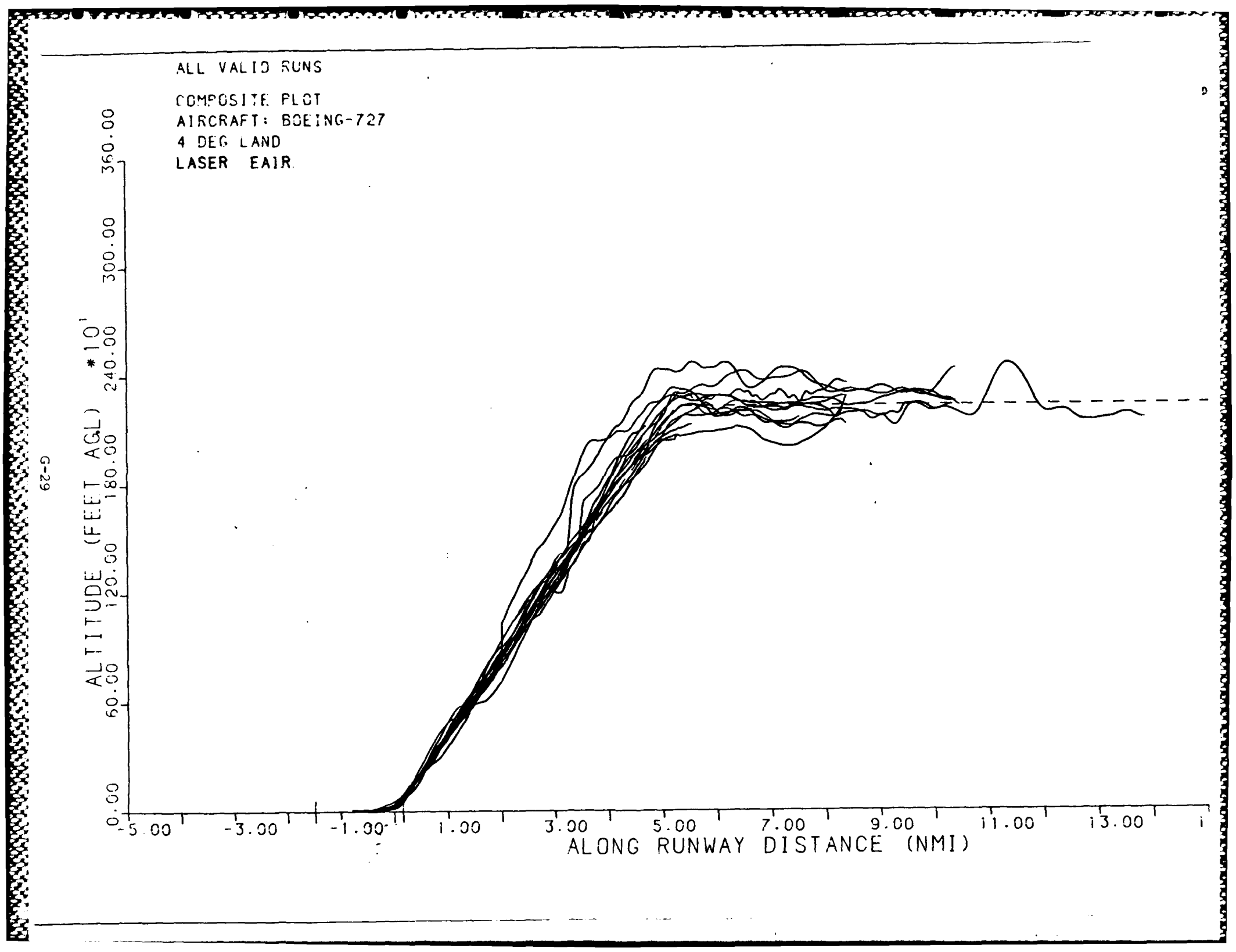



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG MAP
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

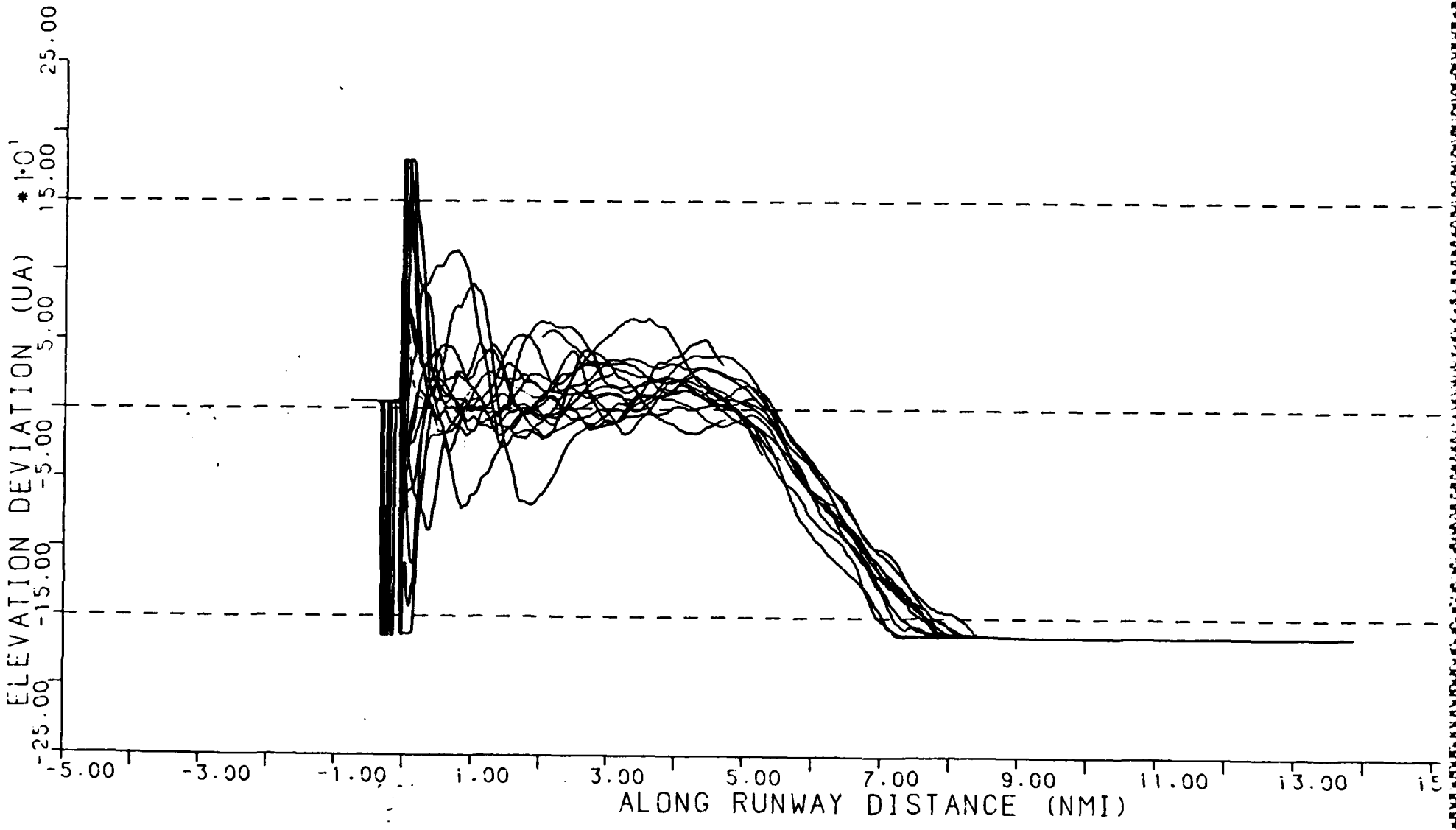
COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG MAP

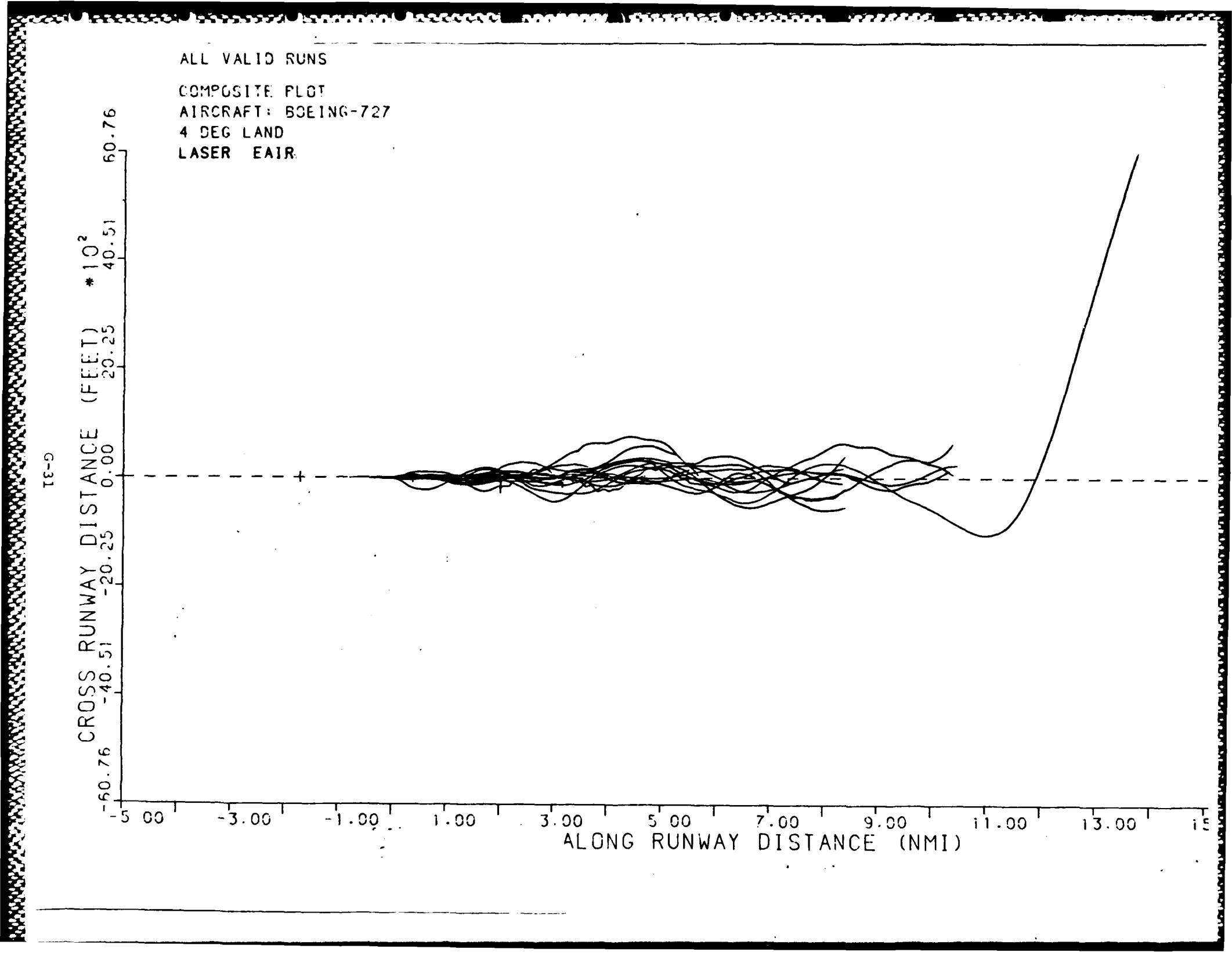



ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG LAND
LASER EAIR
ALTITUDE (FEET AGL) *10¹
0.00
60.00
120.00
180.00
240.00
300.00
360.00
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

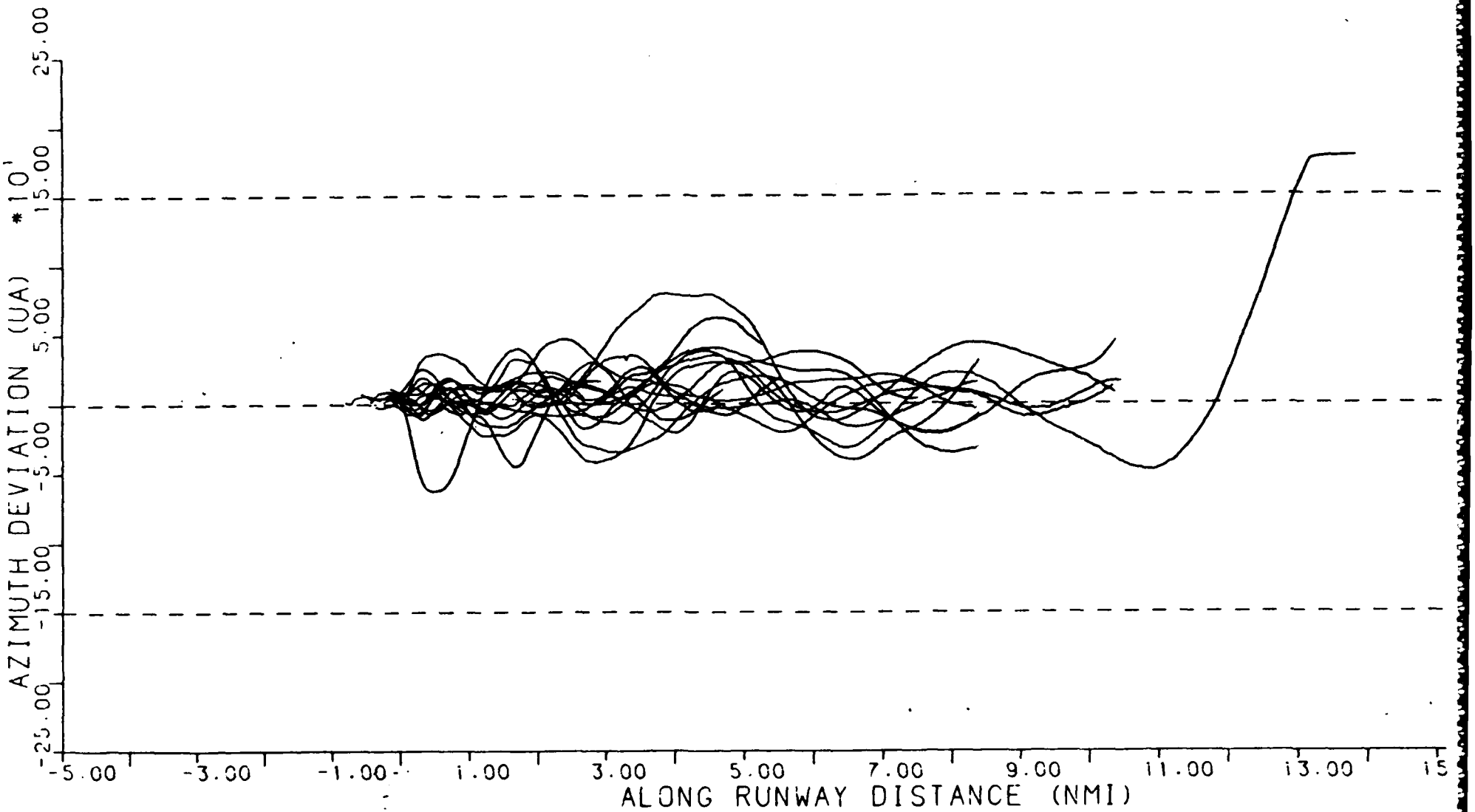
COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG LAND




ALL VALID RUNS
COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG LAND
LASER EAIR
CROSS RUNWAY DISTANCE (FEET) *10²
60.76
40.51
20.25
0.00
-20.25
-40.51
-60.76
-5.00
-3.00
-1.00
1.00
3.00
5.00
7.00
9.00
11.00
13.00
ALONG RUNWAY DISTANCE (NMI)

ALL VALID RUNS

COMPOSITE PLOT
AIRCRAFT: BOEING-727
4 DEG LAND

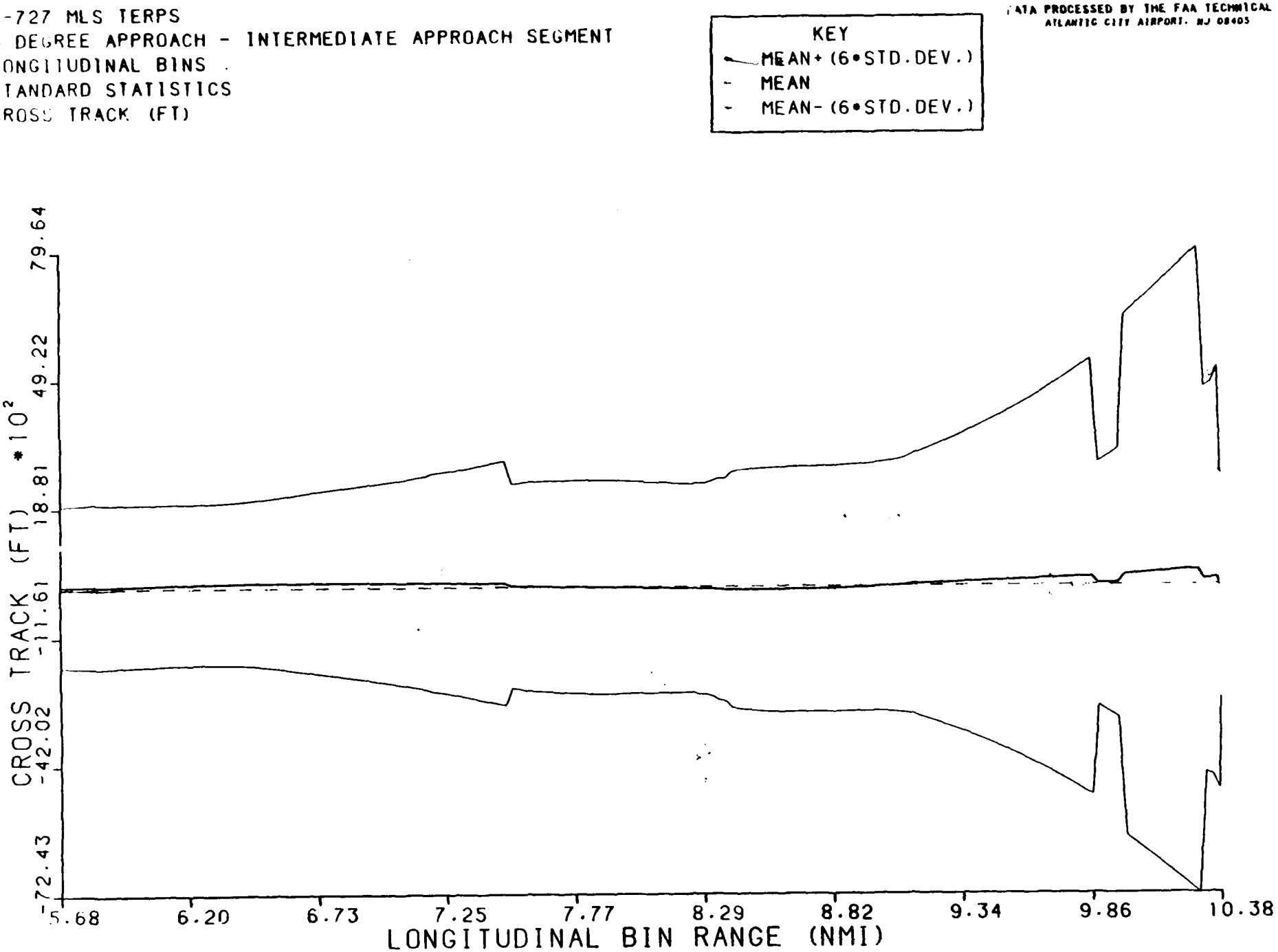


APPENDIX H

ISOPROBABILITY PLOTS

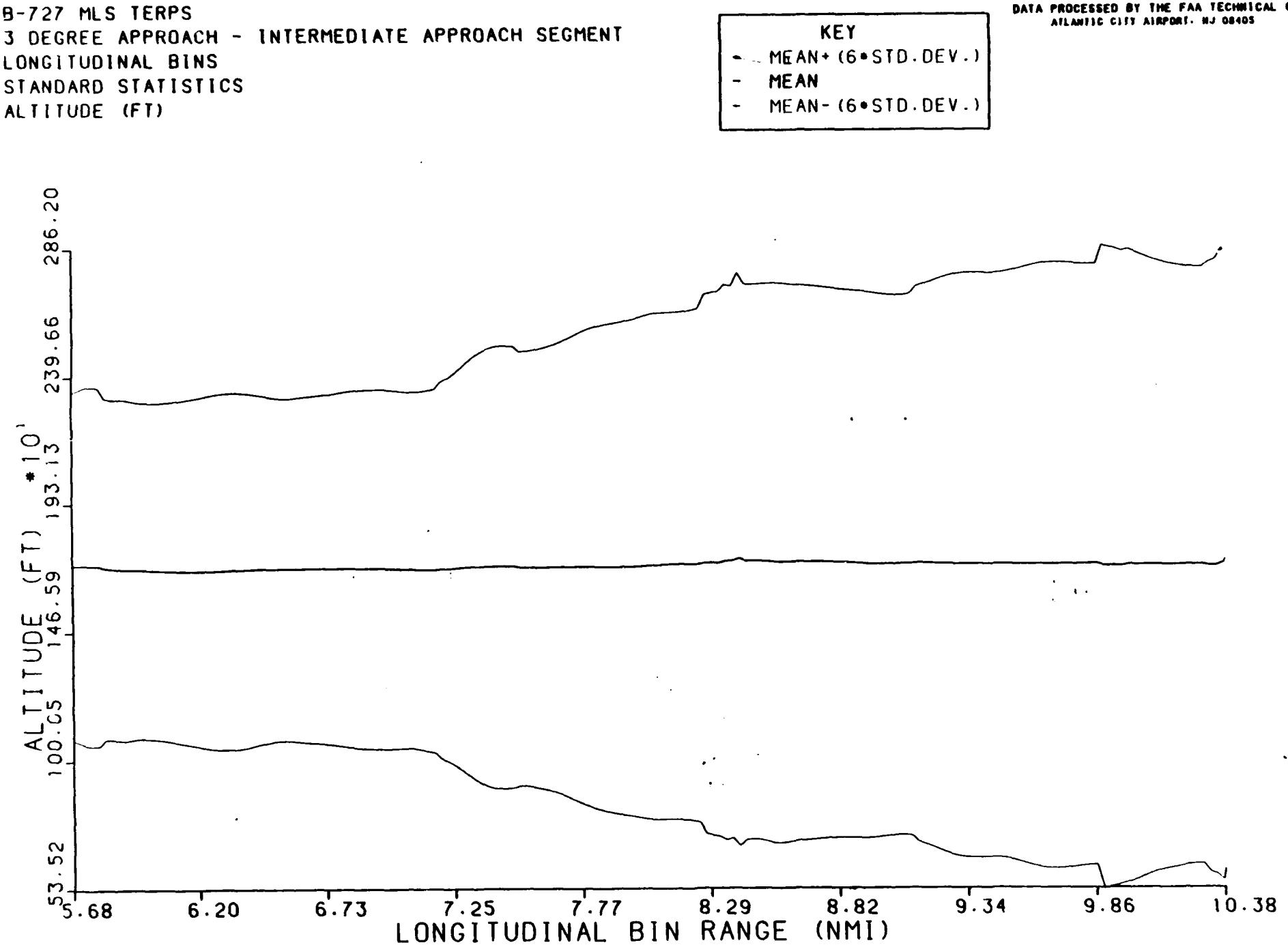
B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

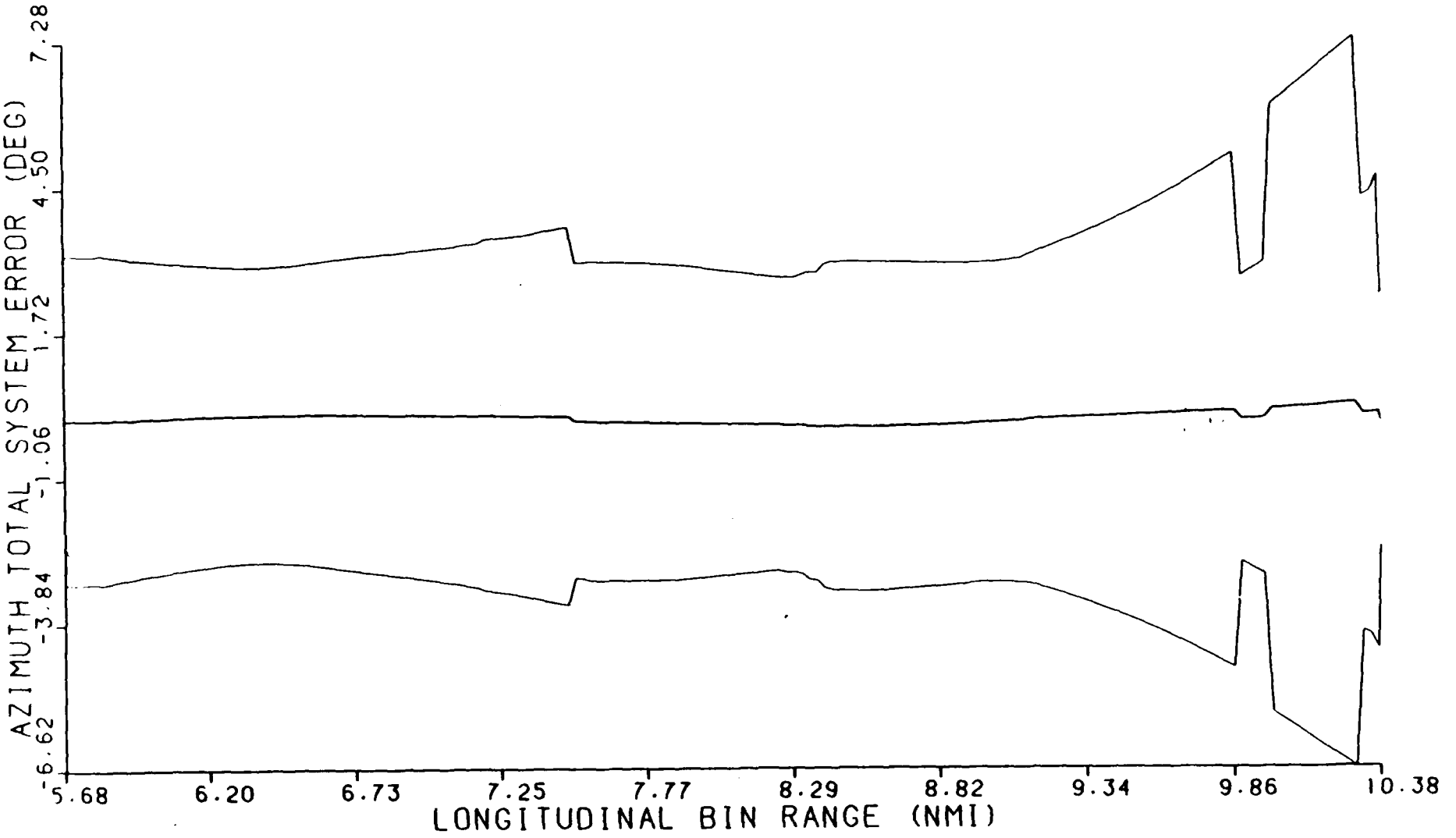
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

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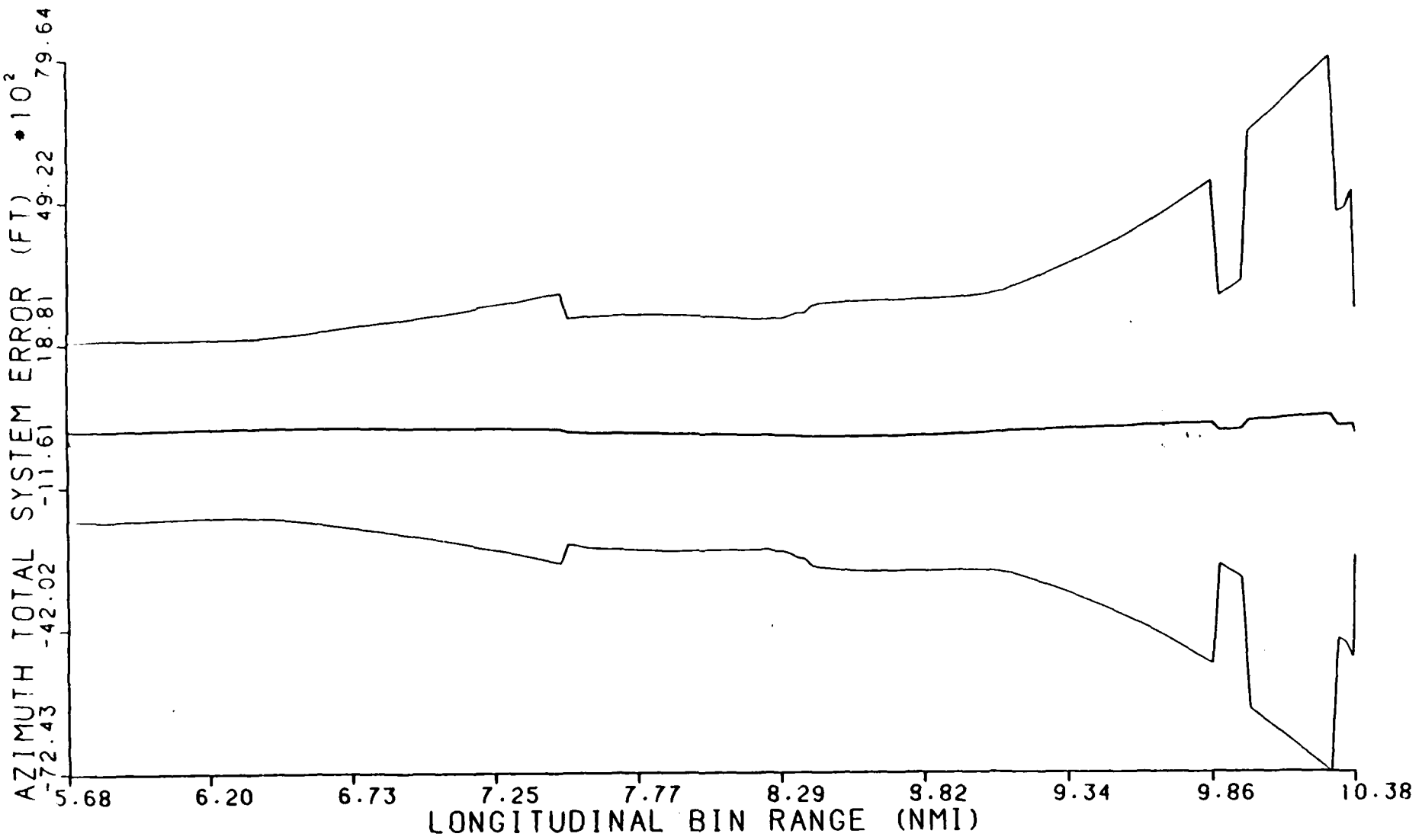
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

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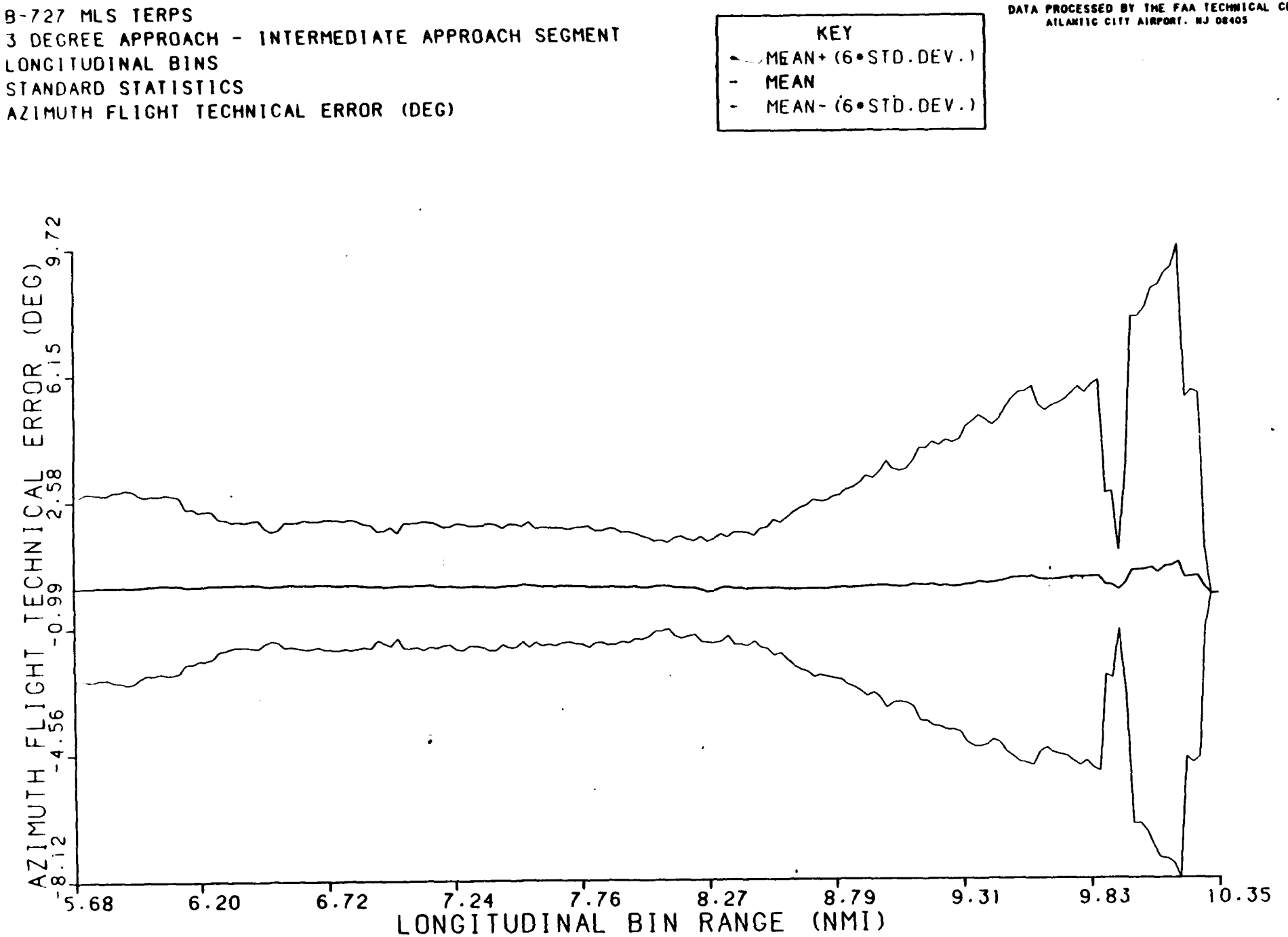
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

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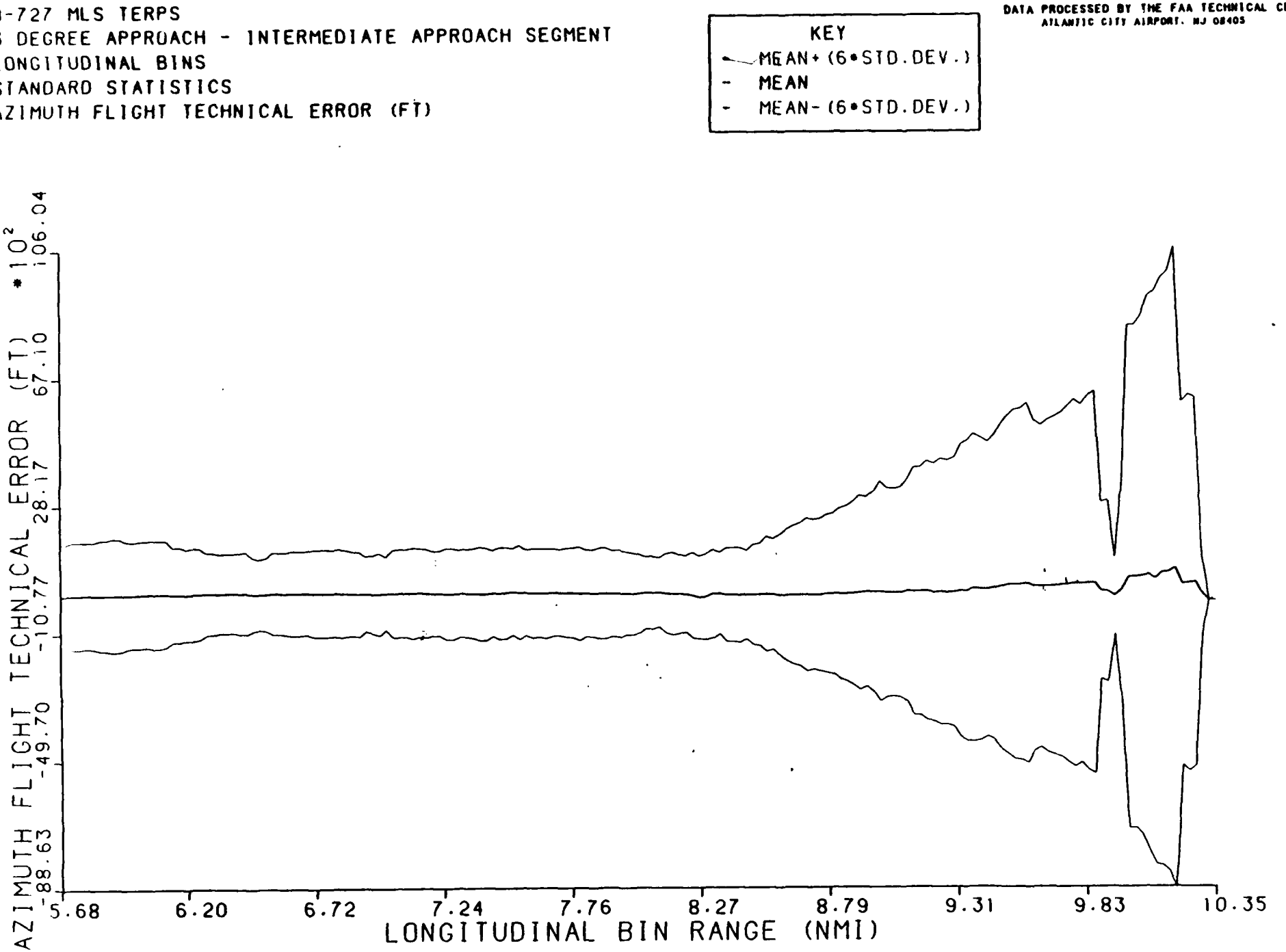
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

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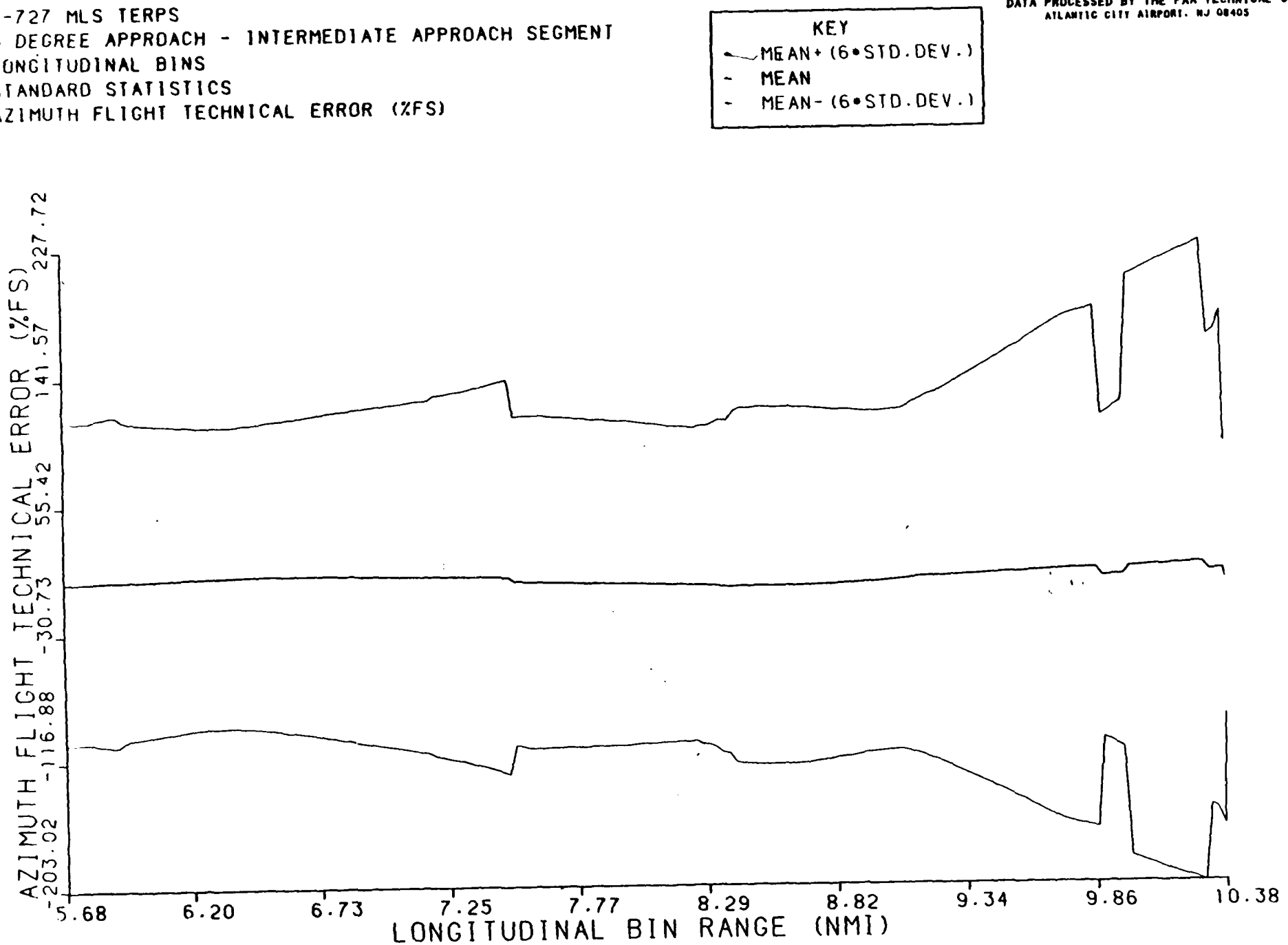
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

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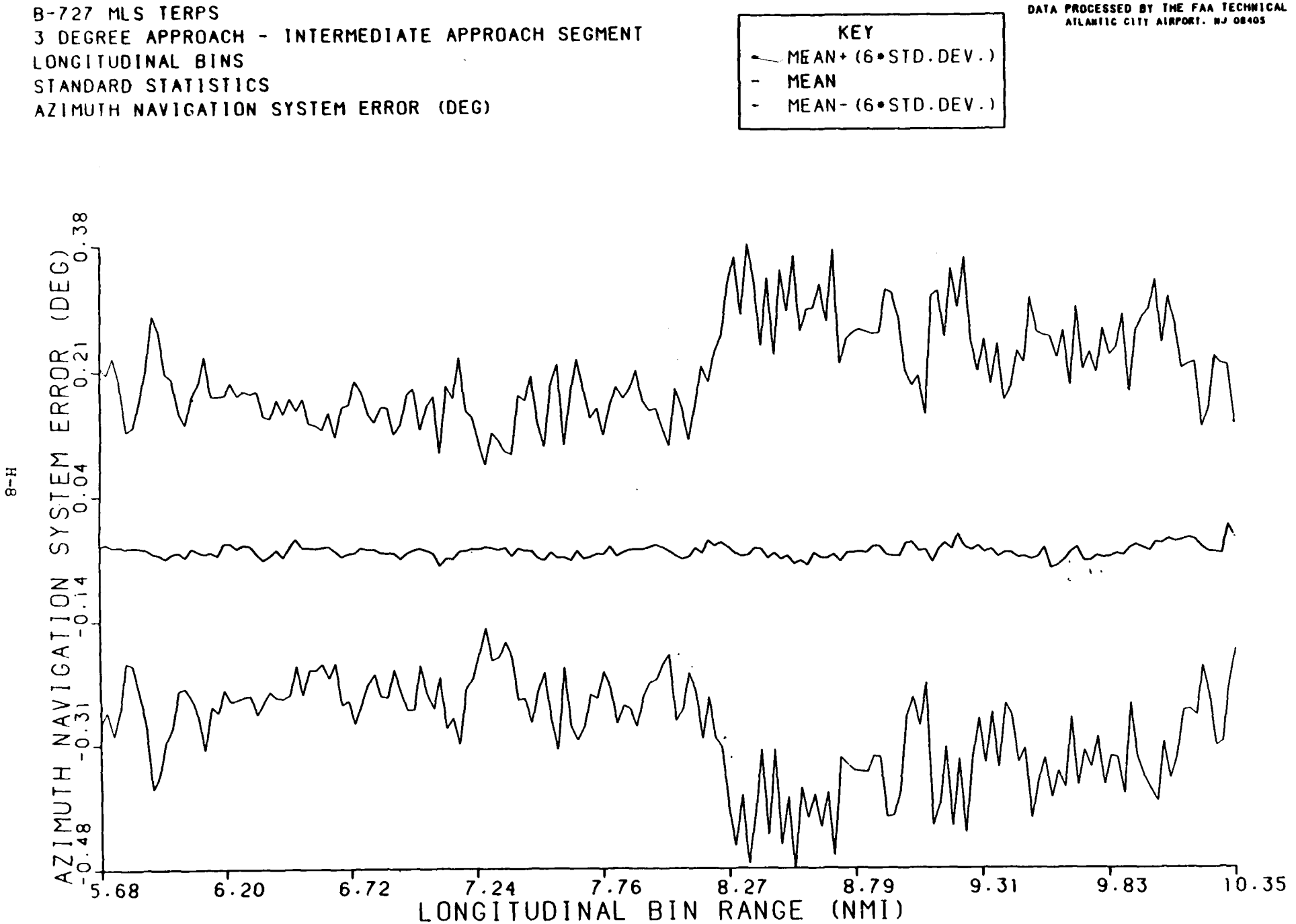
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

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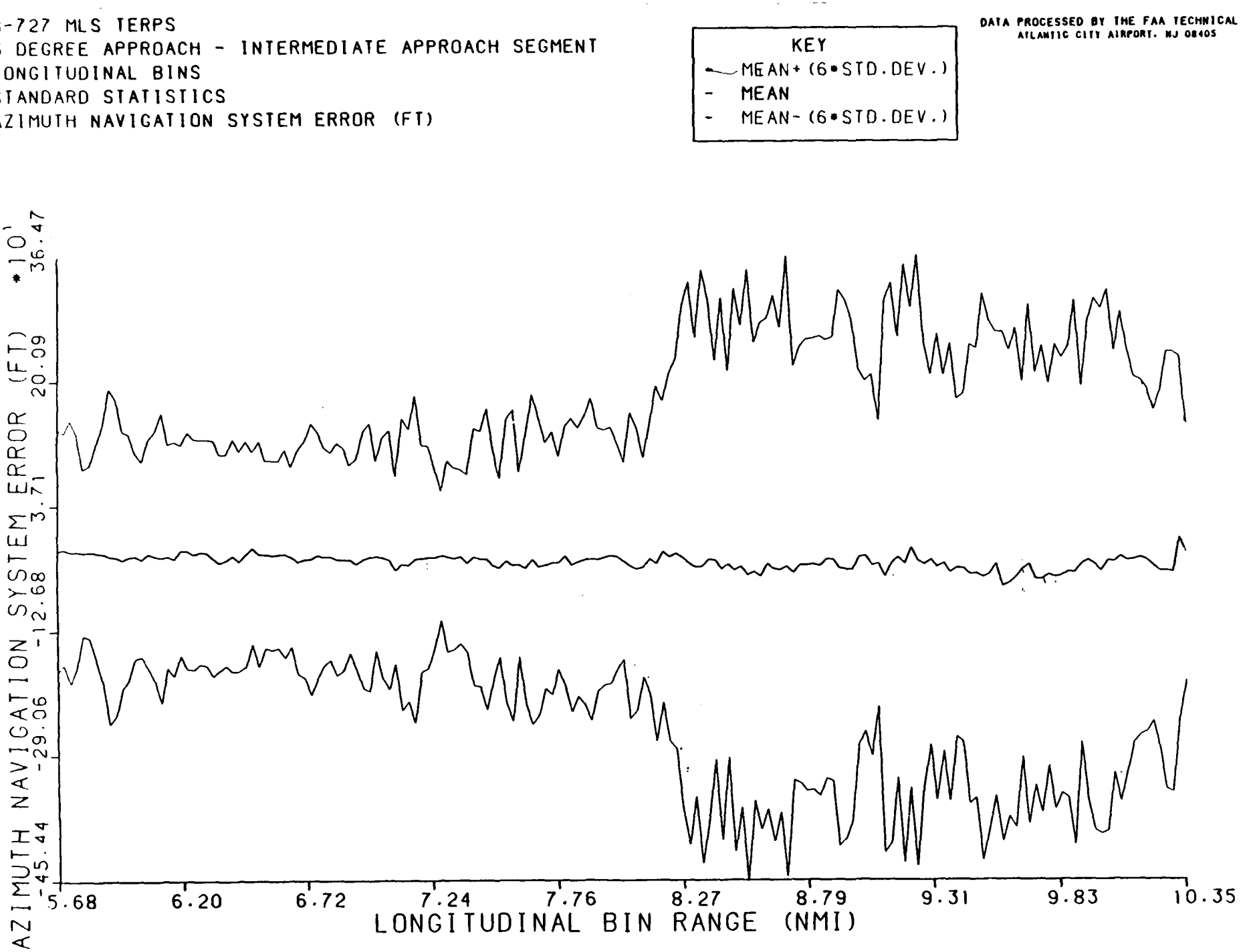
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

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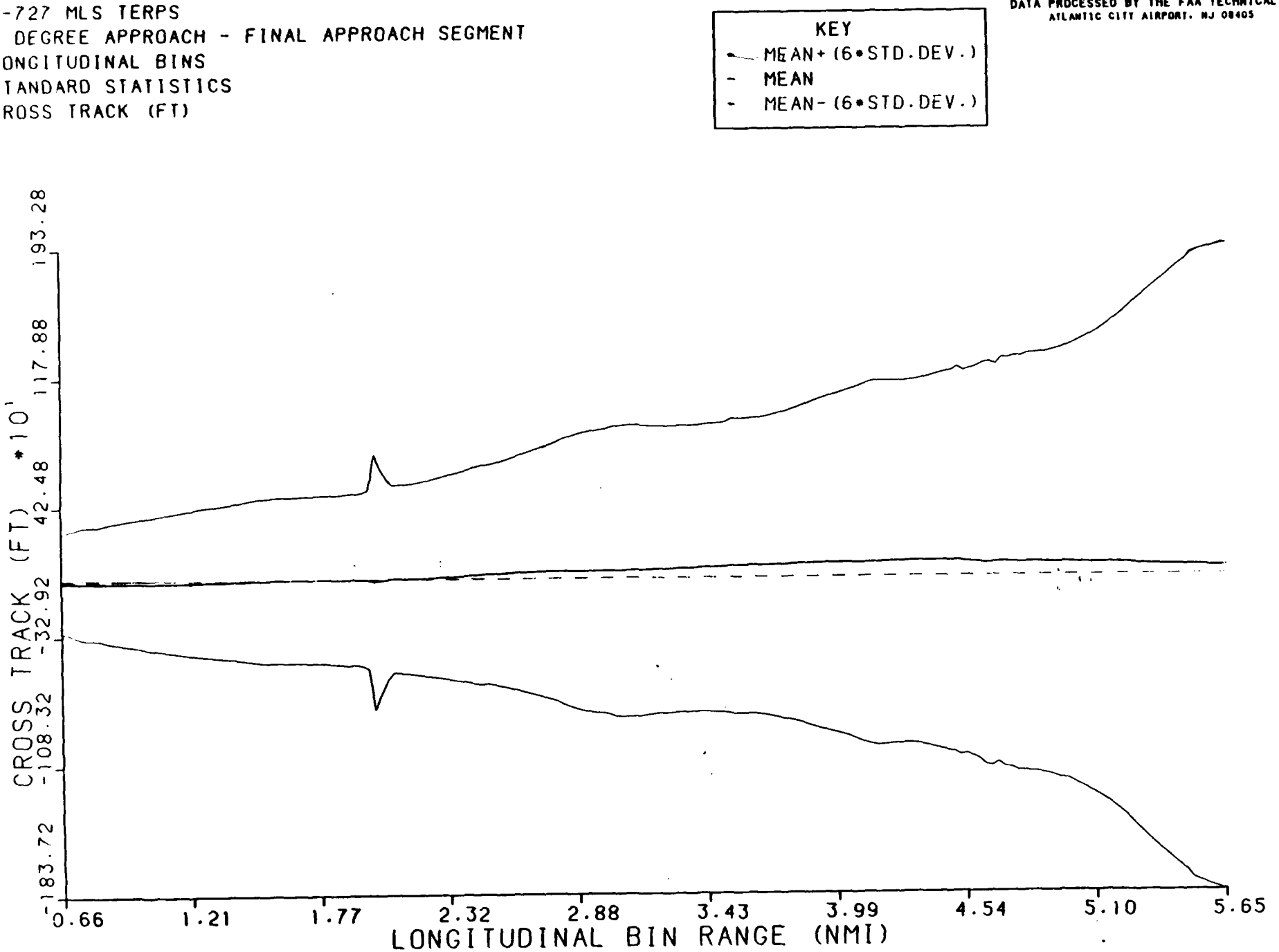
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

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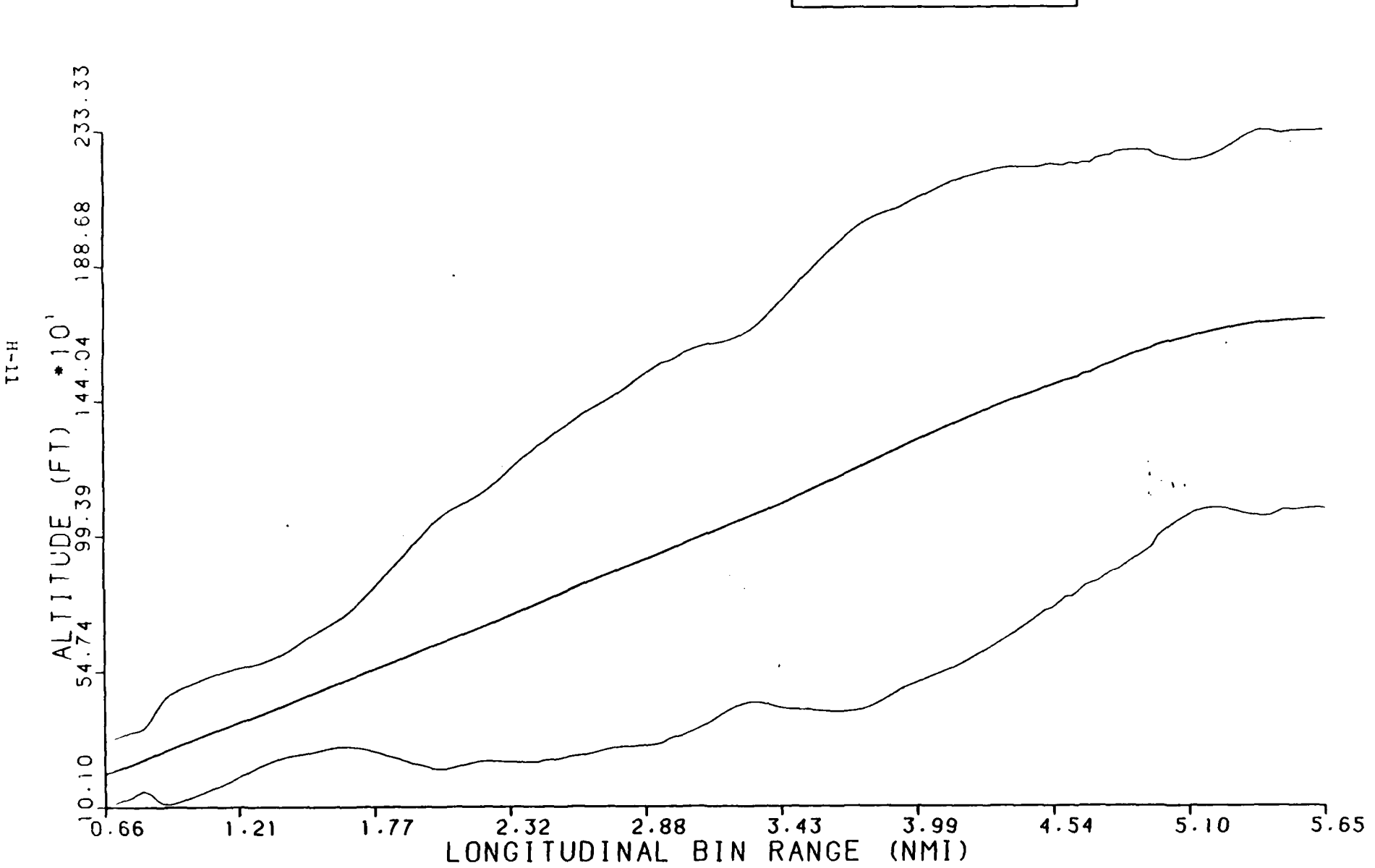
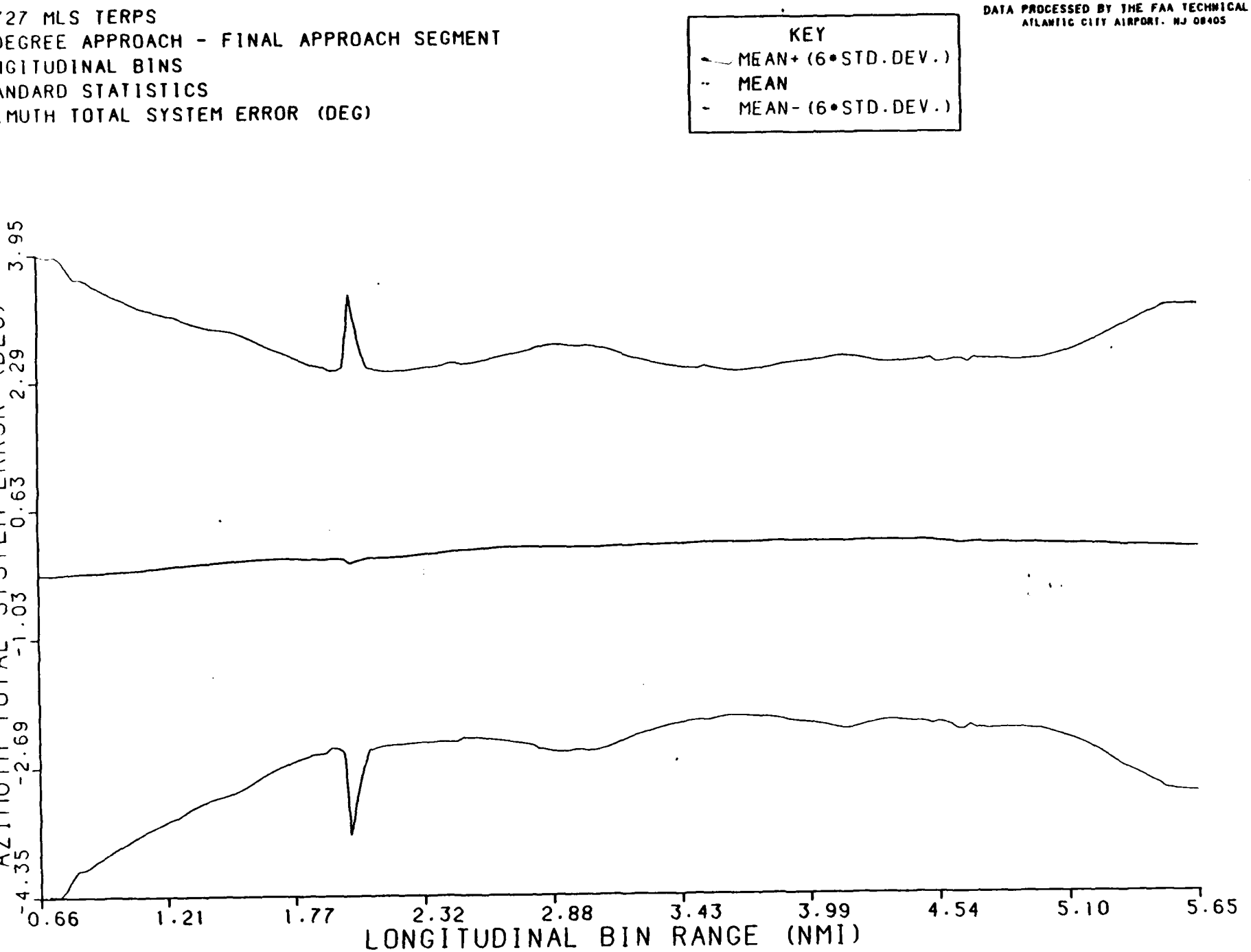
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

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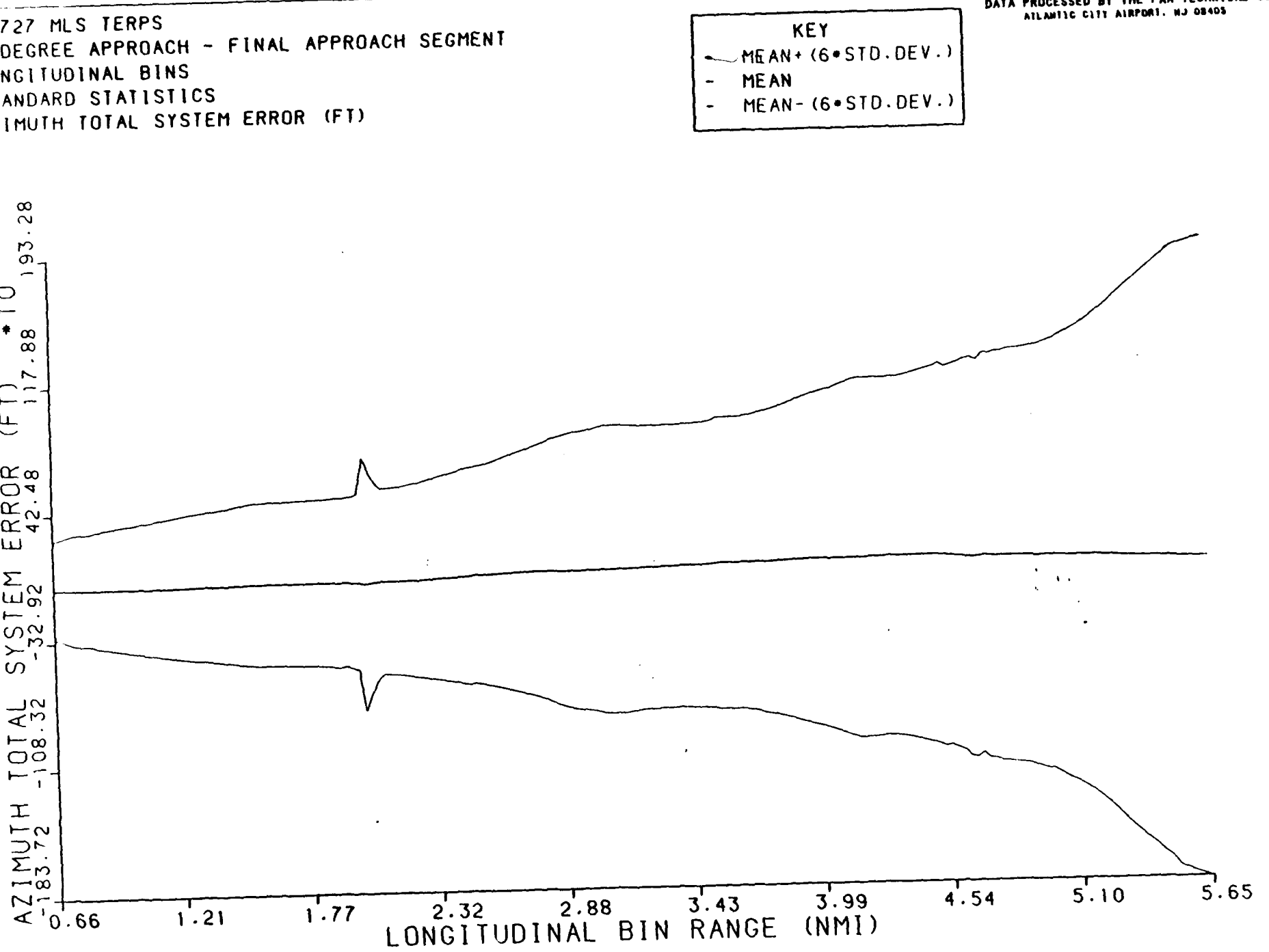
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

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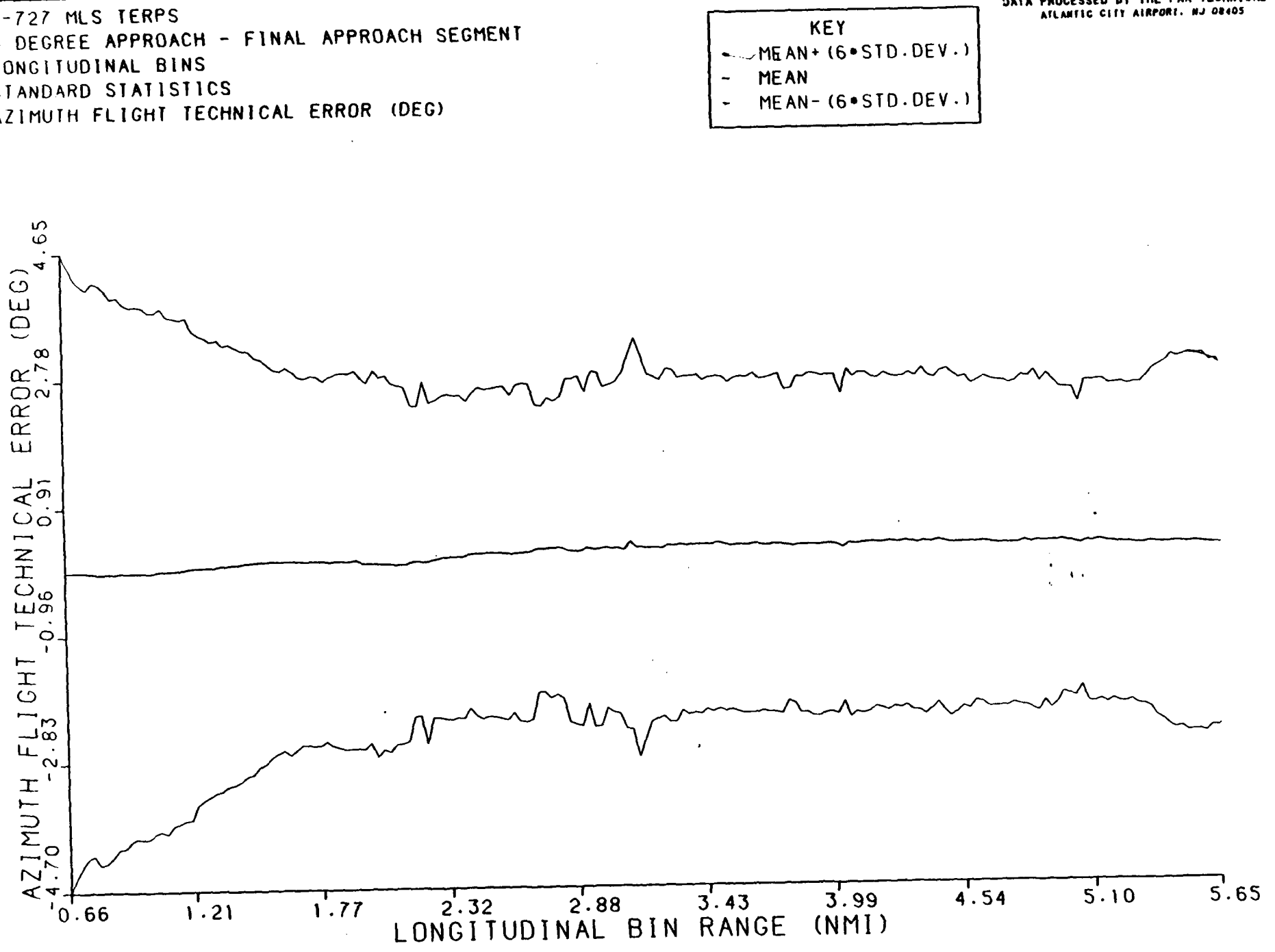
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

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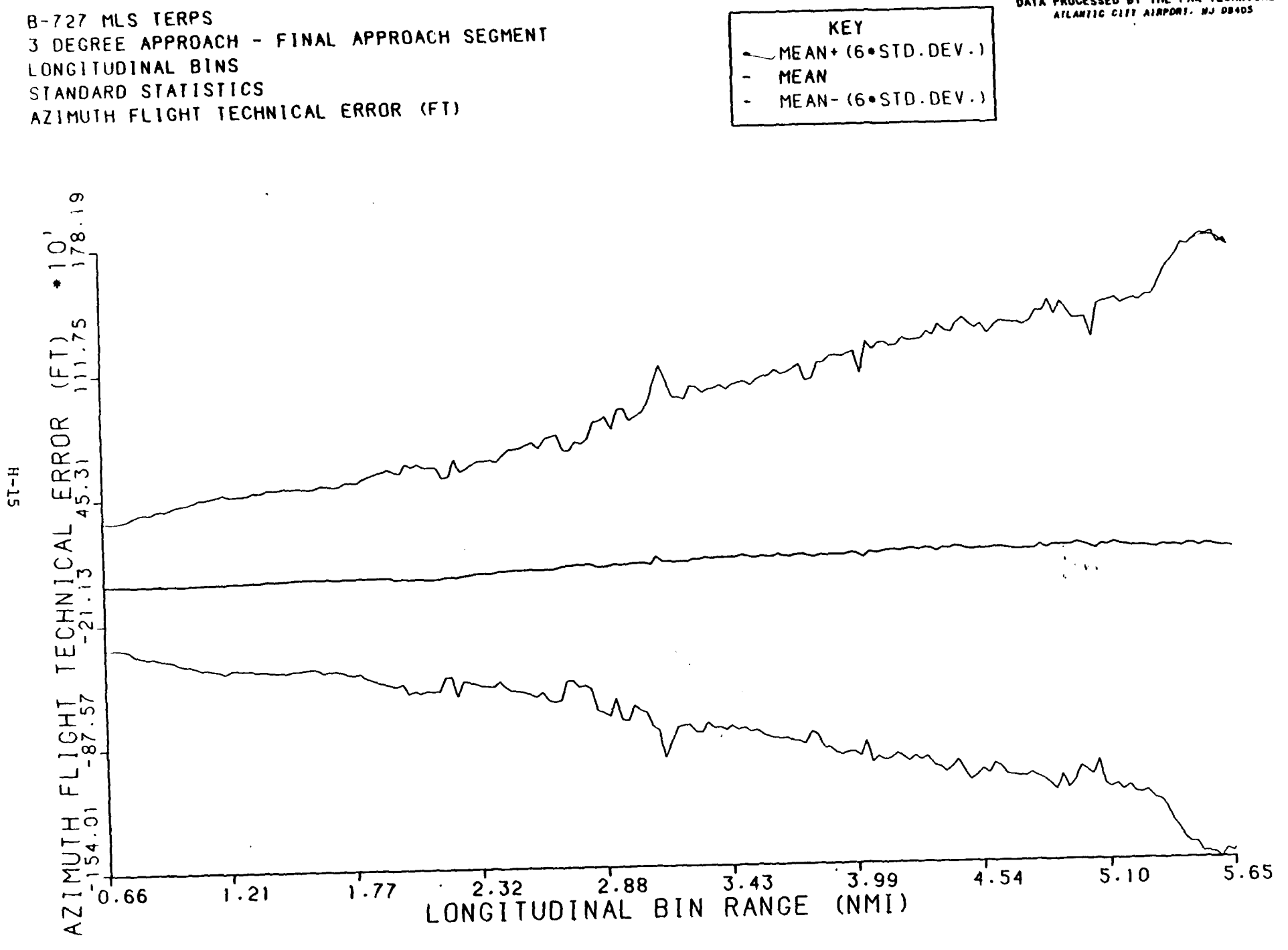
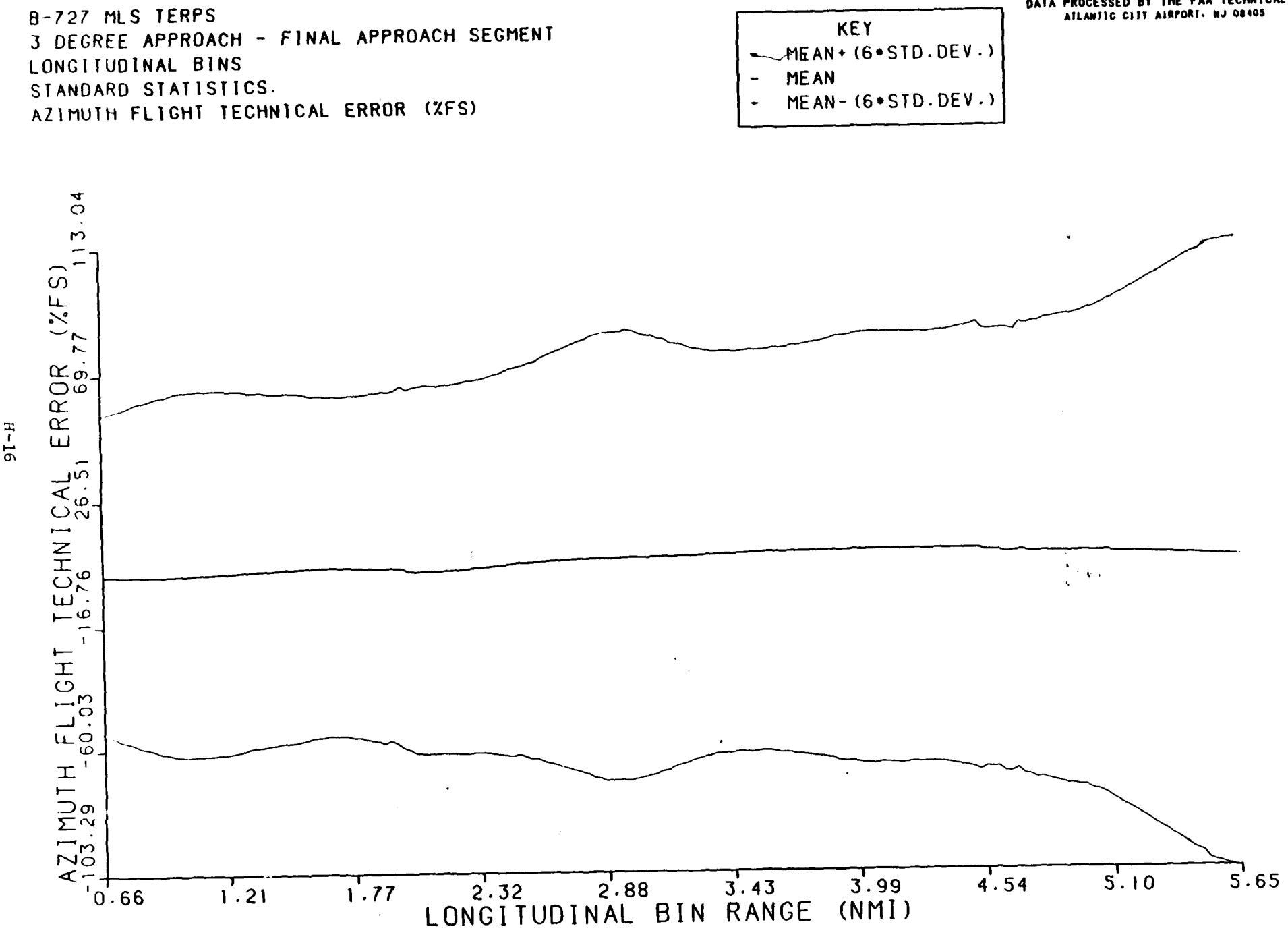
ATLANTIC CITY AIRPORT, NJ 08405



ST-H

B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS.
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

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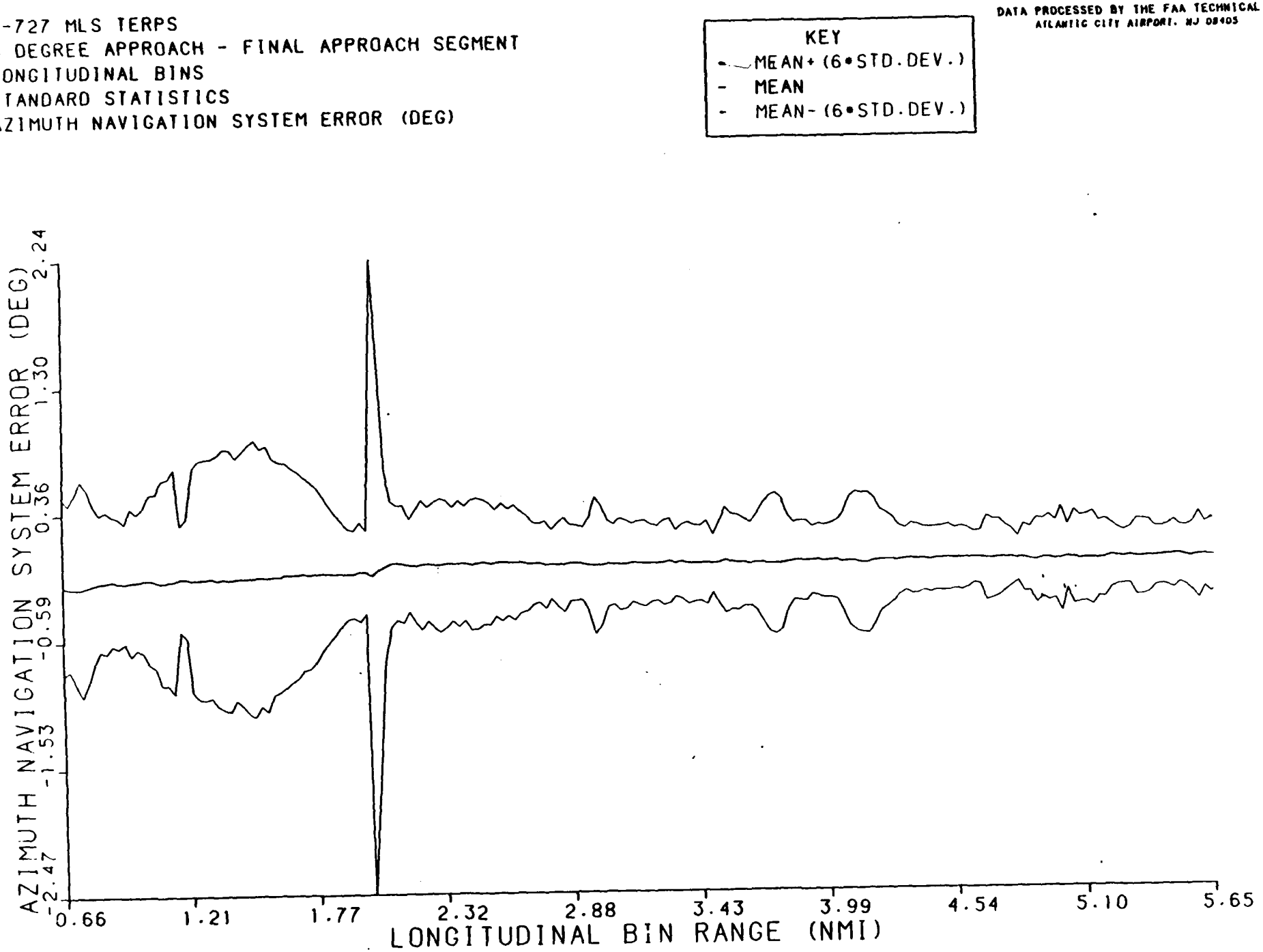
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

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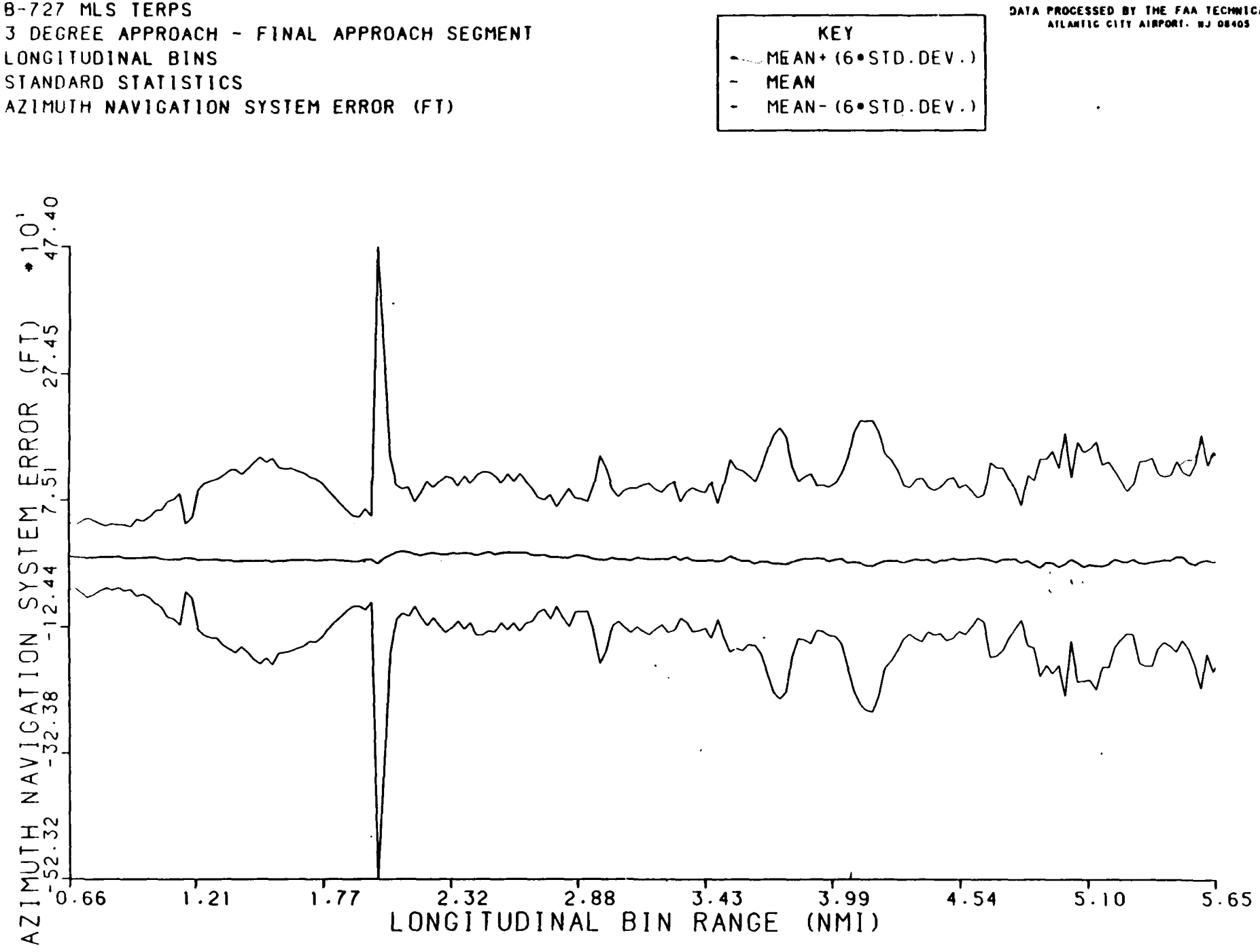
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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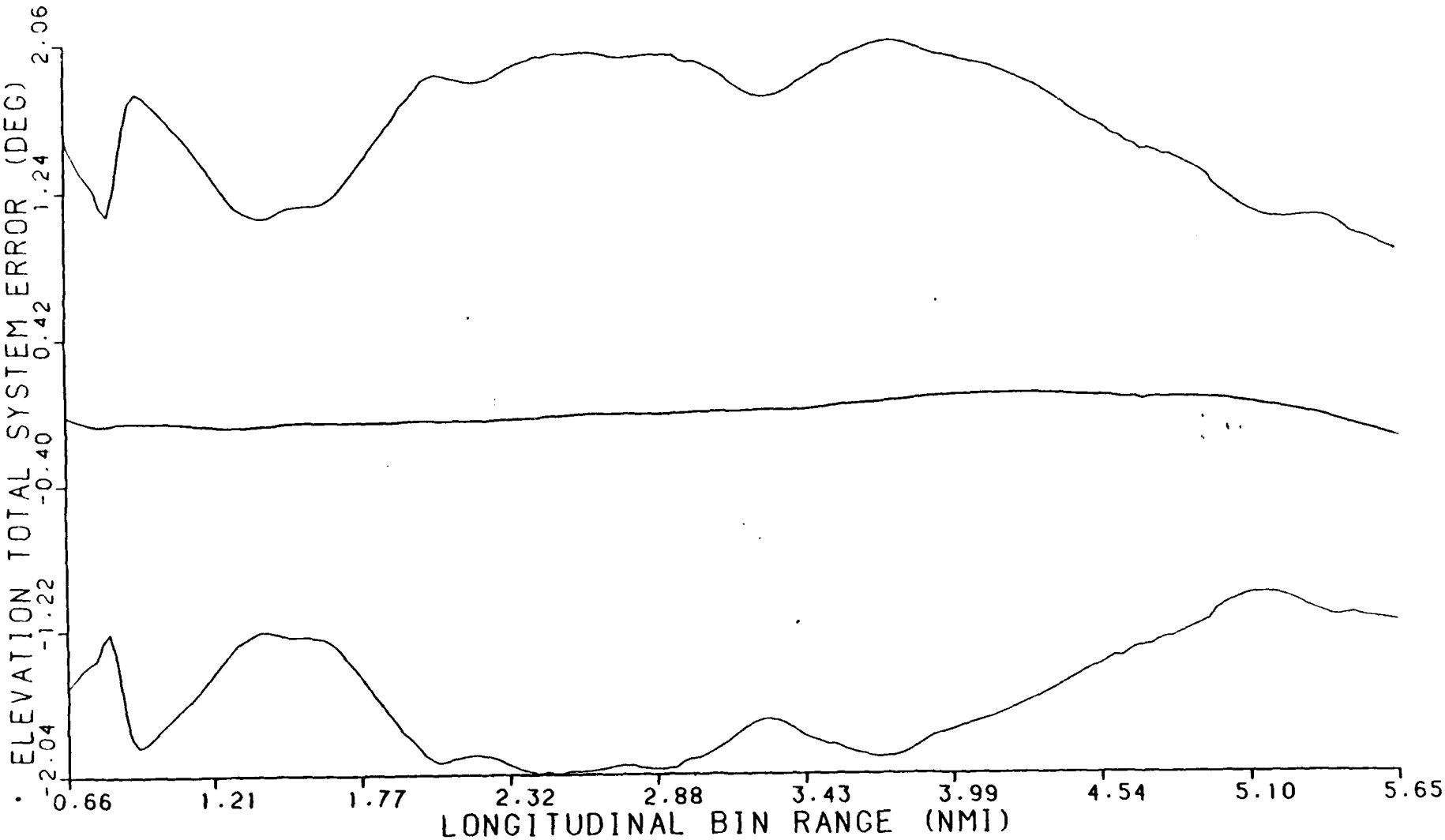
- MEAN
- MEAN- (6*STD.DEV.)



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (FT)

KEY
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- MEAN
- MEAN-(6*STD.DEV.)

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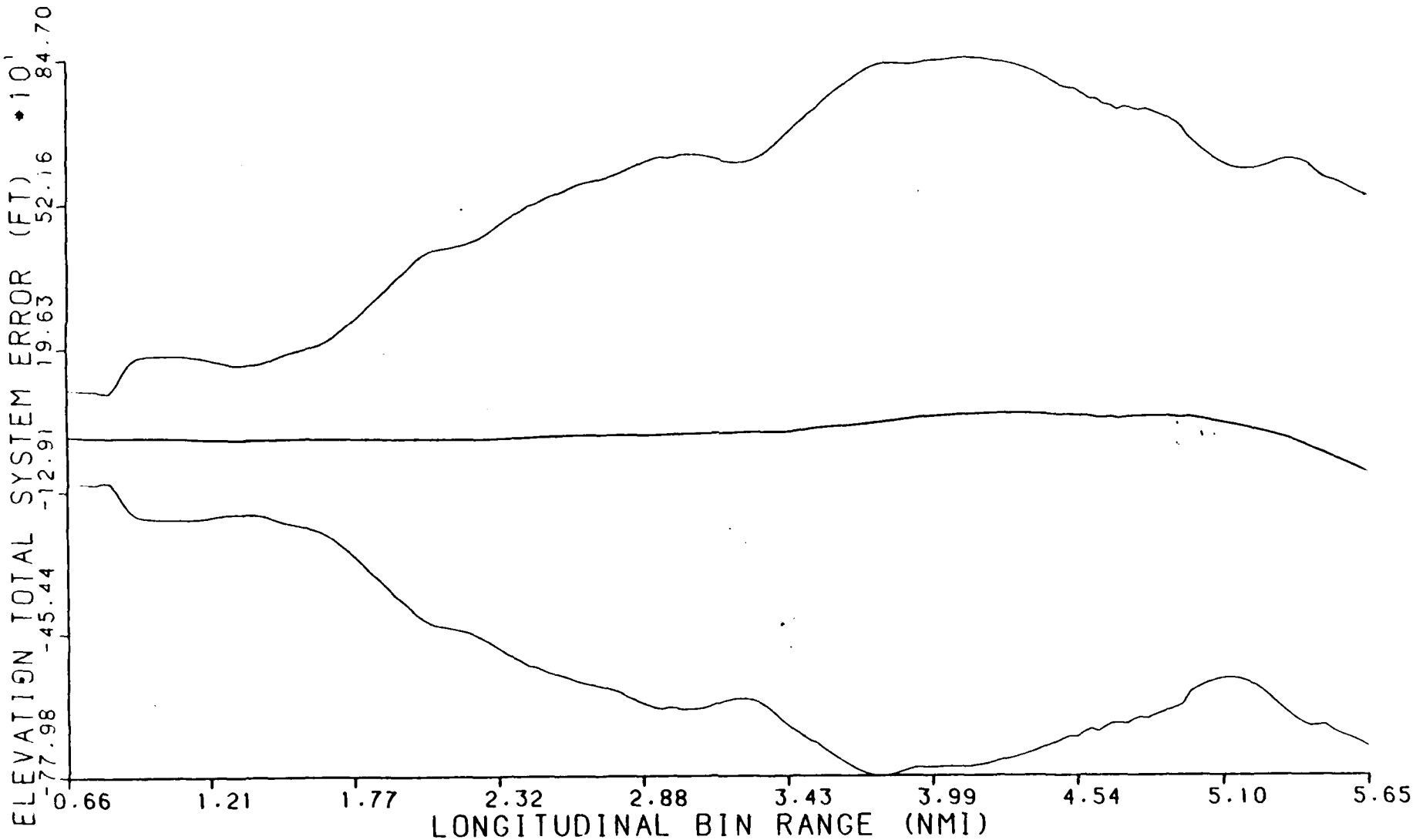
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

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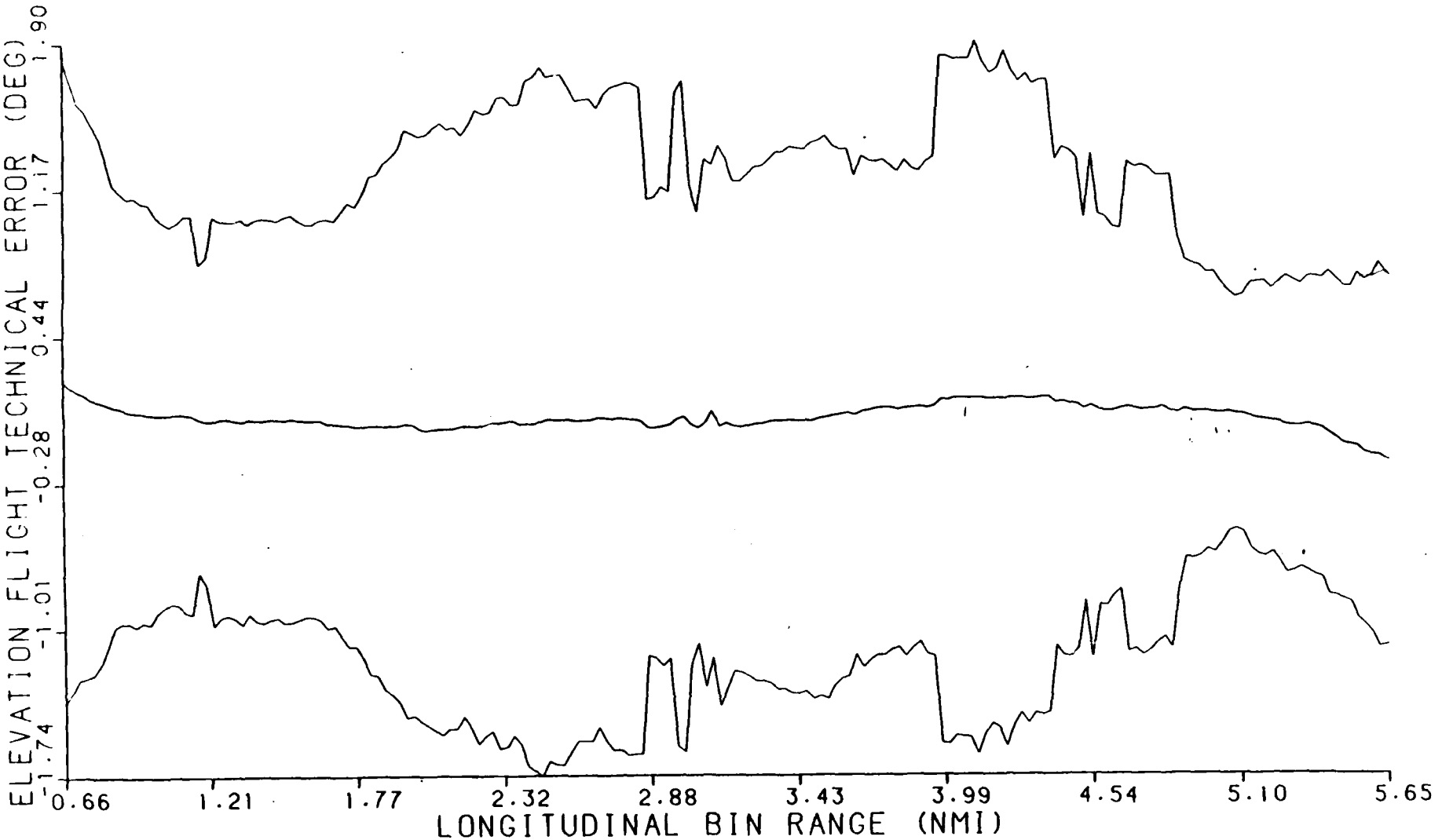
- MEAN
- MEAN-(6*STD.DEV.)



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (FT)

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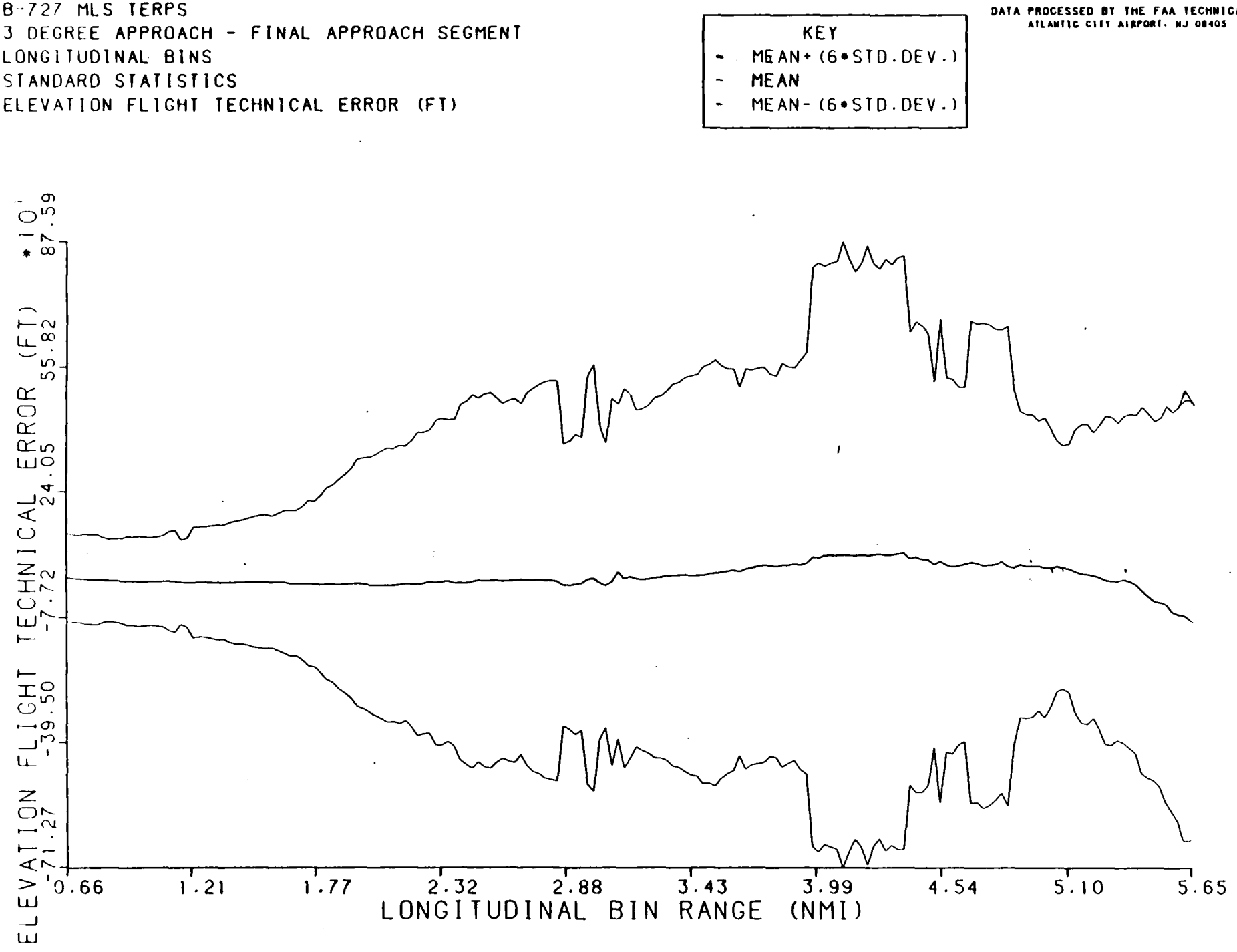
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (%FS)

KEY
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- MEAN
- MEAN-(6*STD.DEV.)

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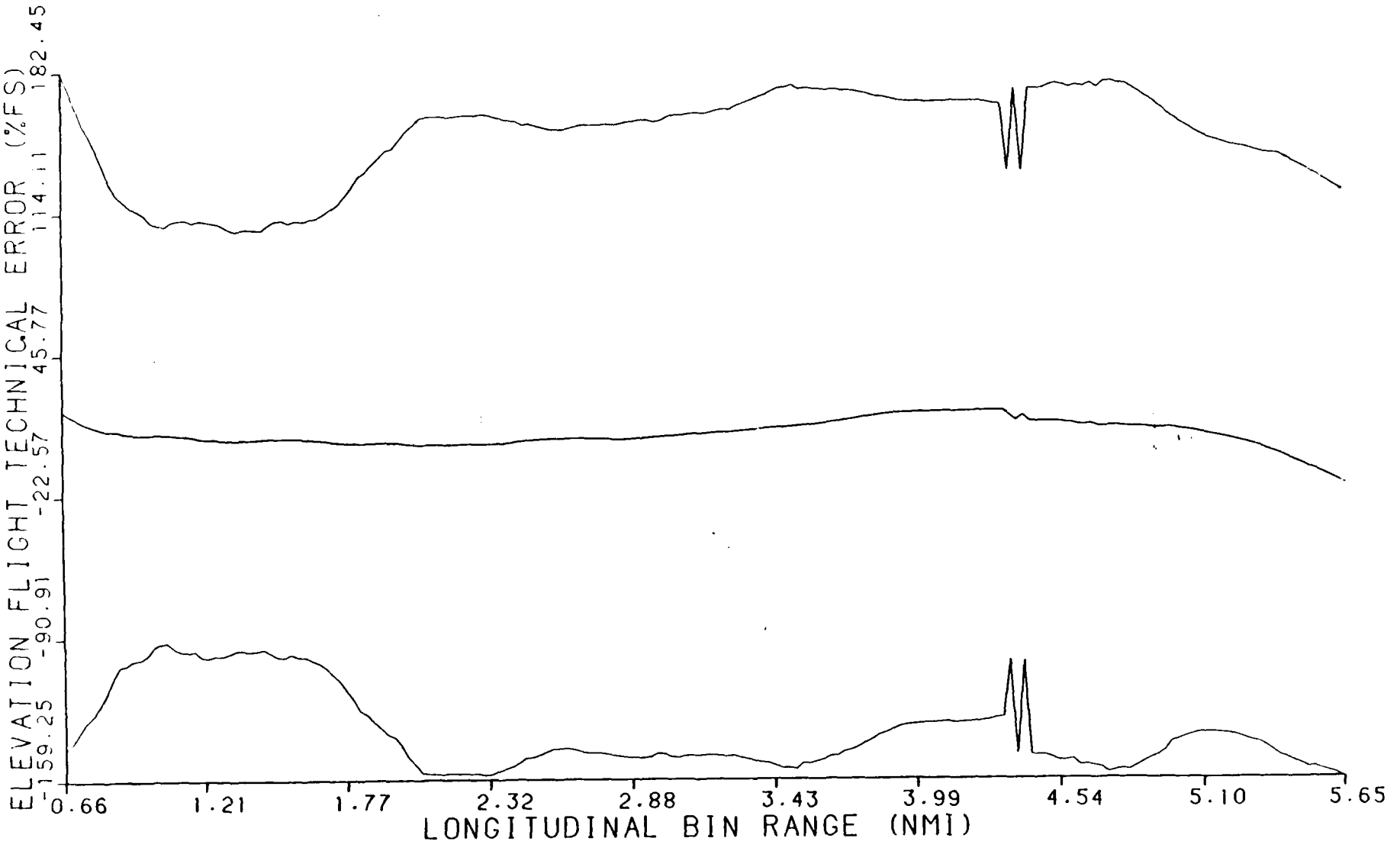

B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (DEG)

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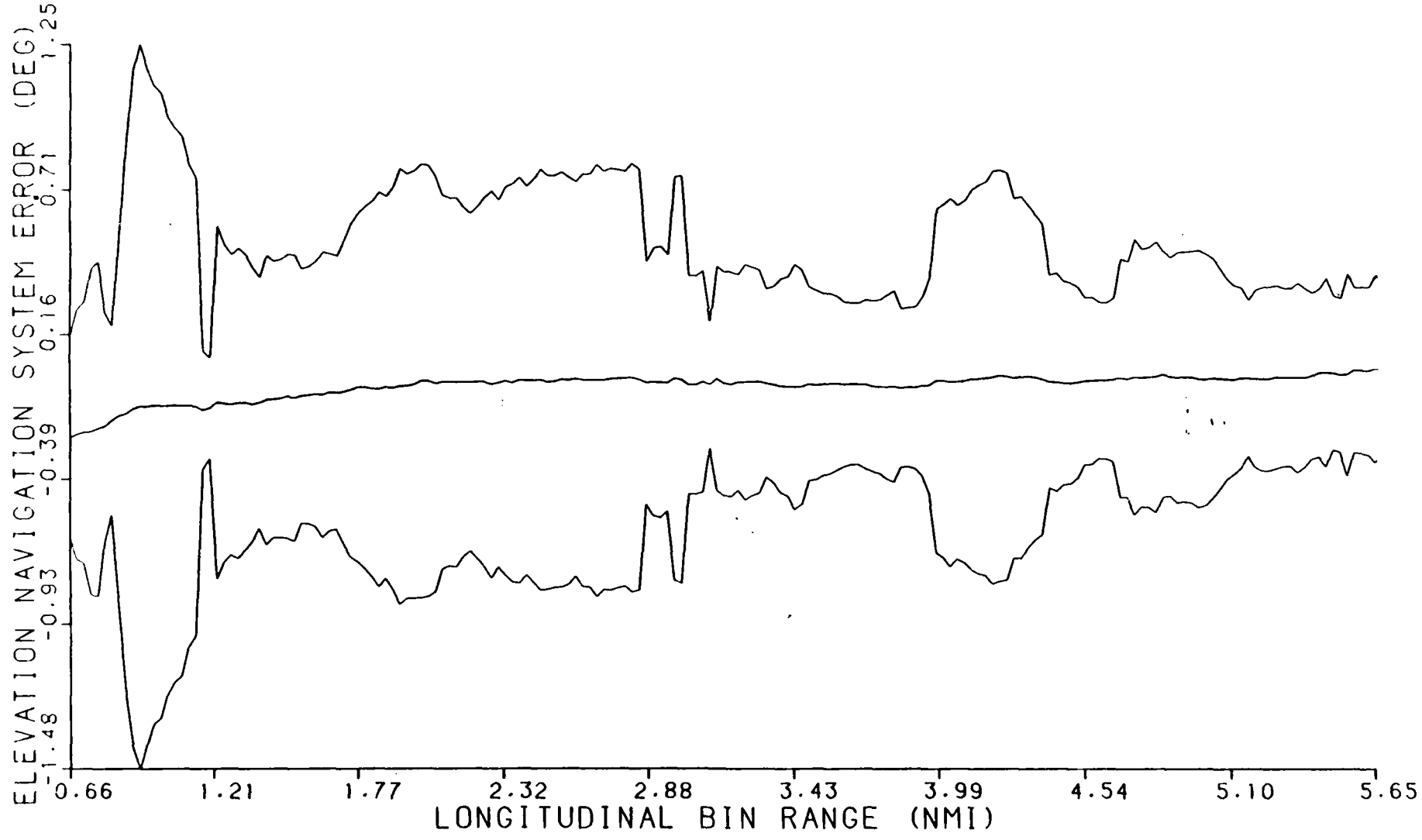
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (FT)

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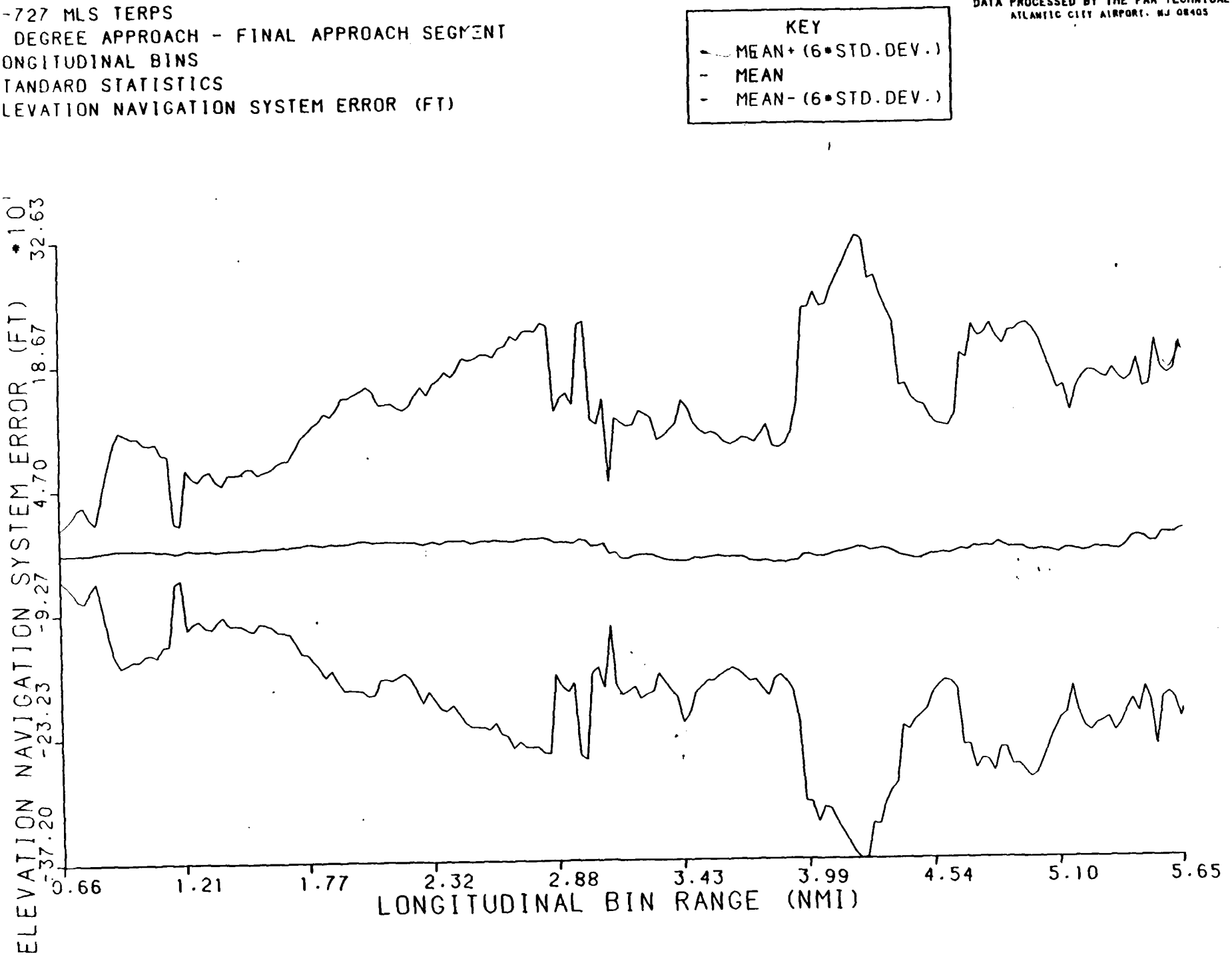
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

KEY
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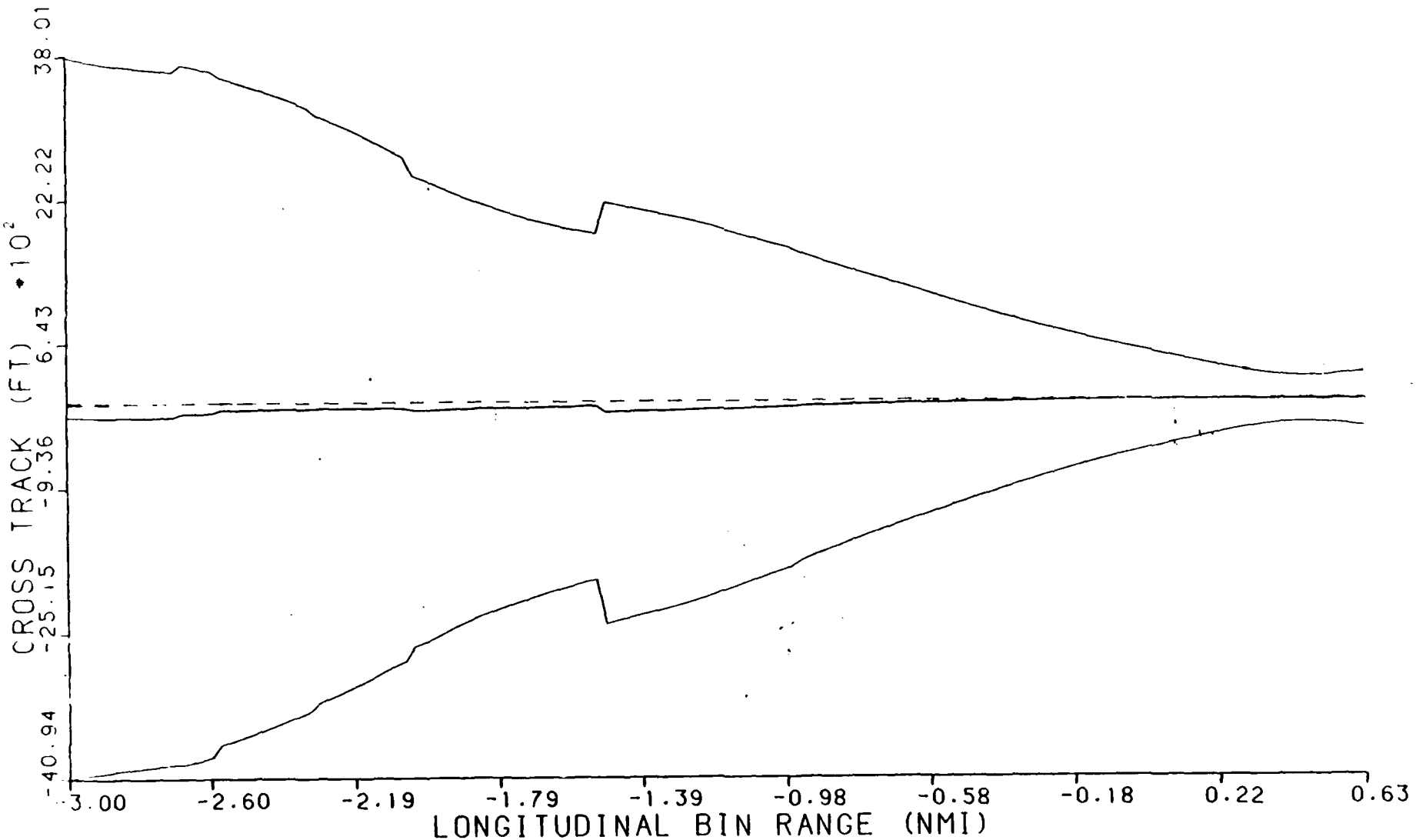
-- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

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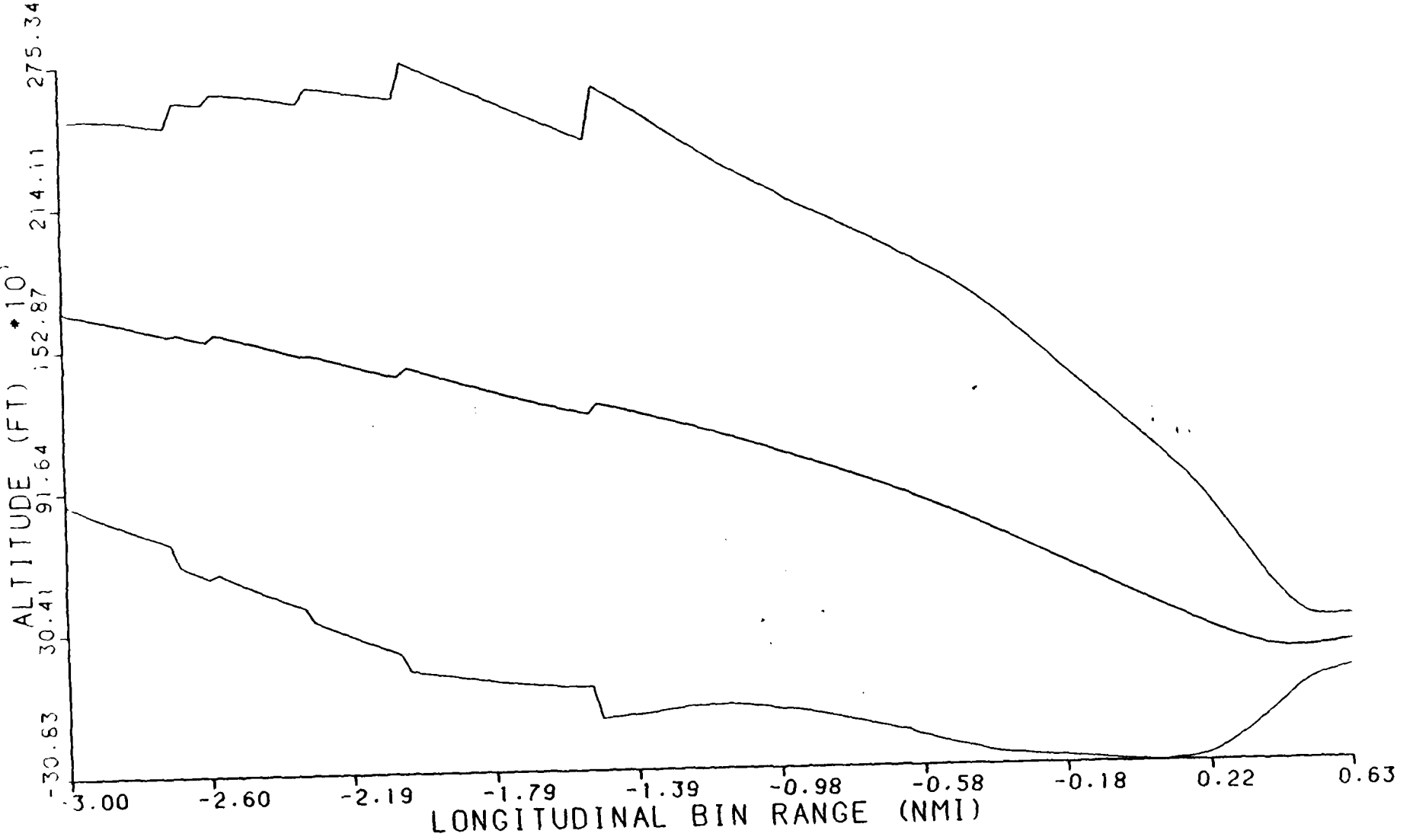
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS

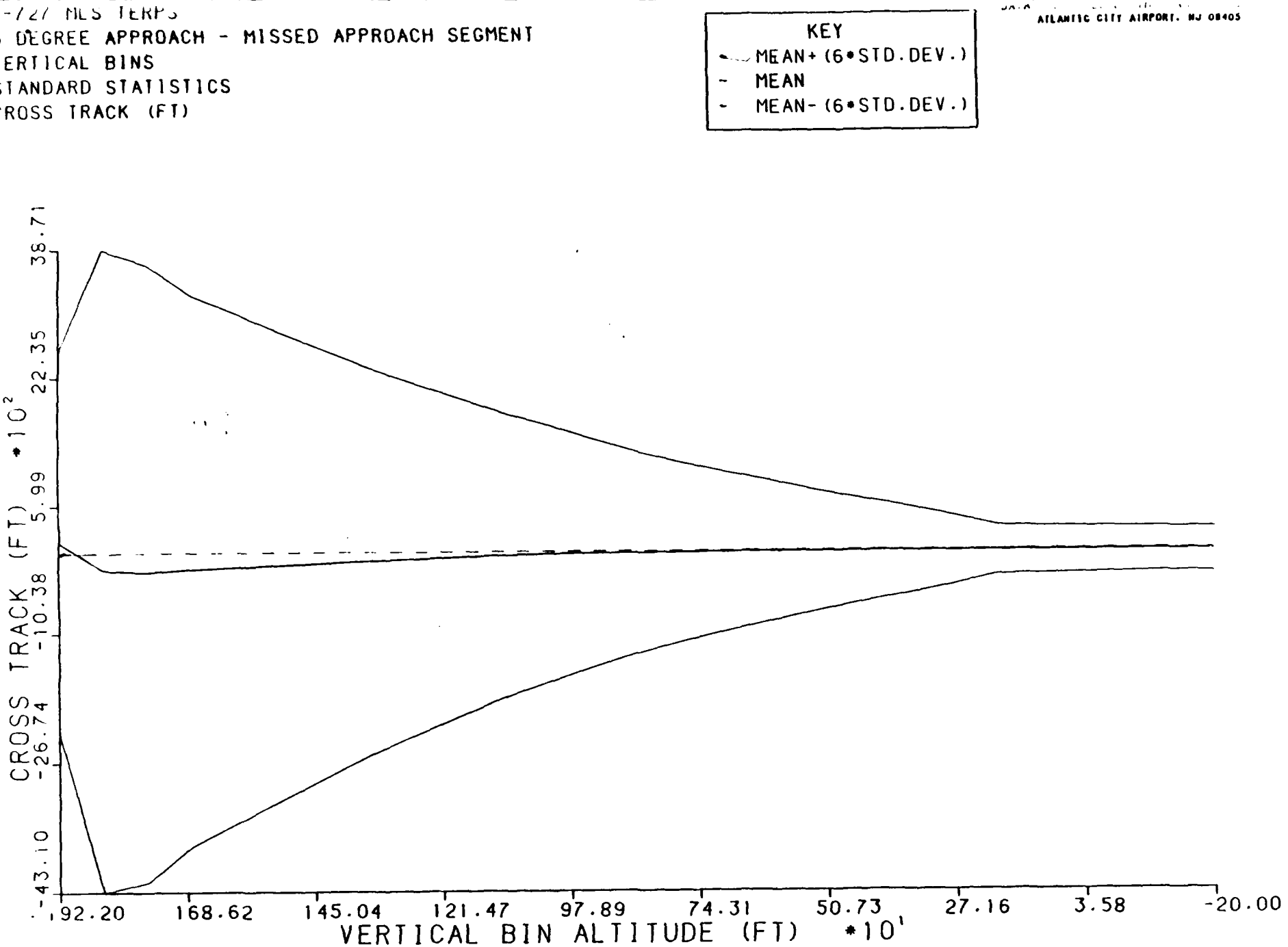
3 DEGREE APPROACH - MISSED APPROACH SEGMENT

VERTICAL BINS

STANDARD STATISTICS

CROSS TRACK (FT)

ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - MISSED APPROACH SEGMENT
VERTICAL BINS
STANDARD STATISTICS
ALONG TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

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- MEAN
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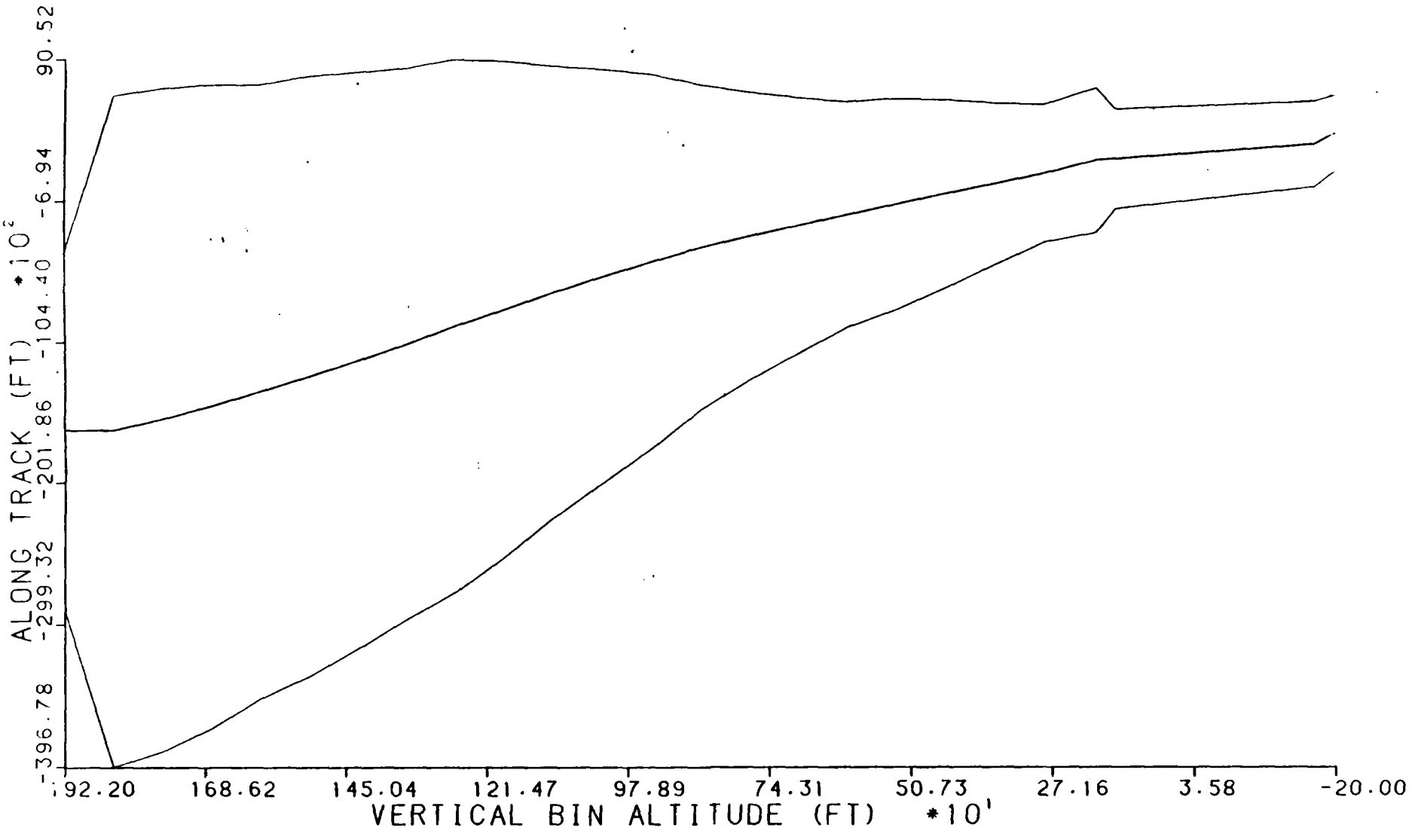

B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

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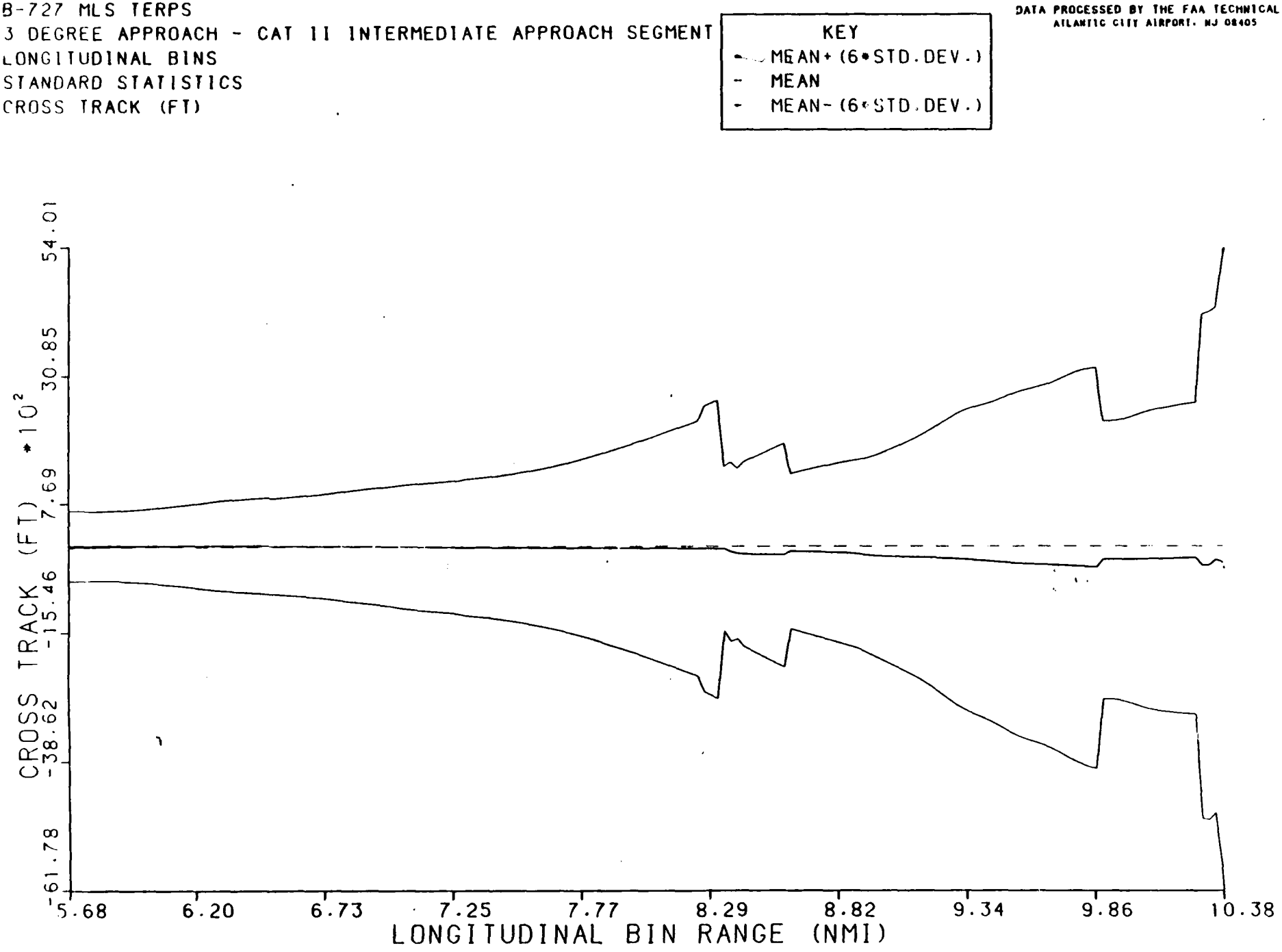
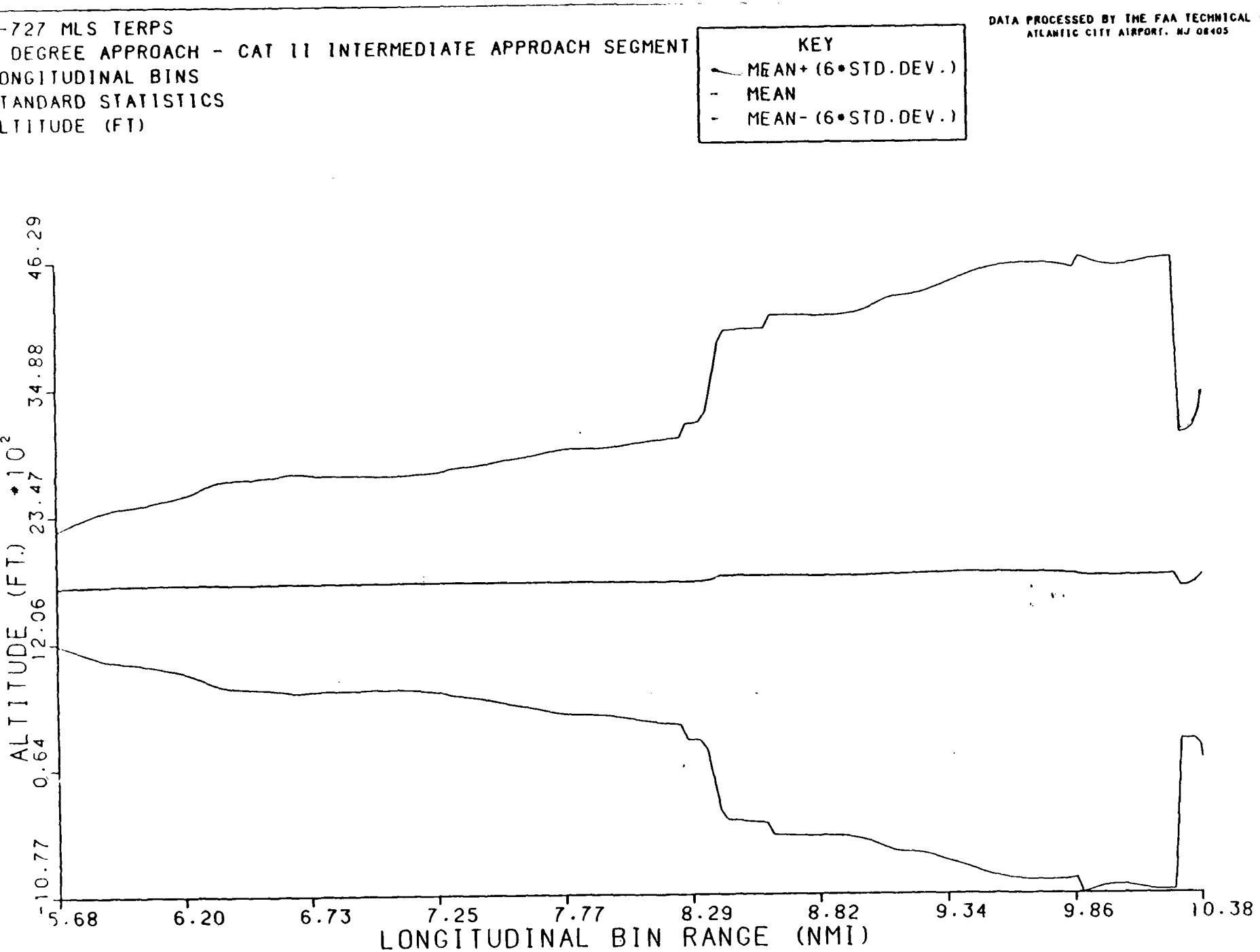
ATLANTIC CITY AIRPORT, NJ 08405



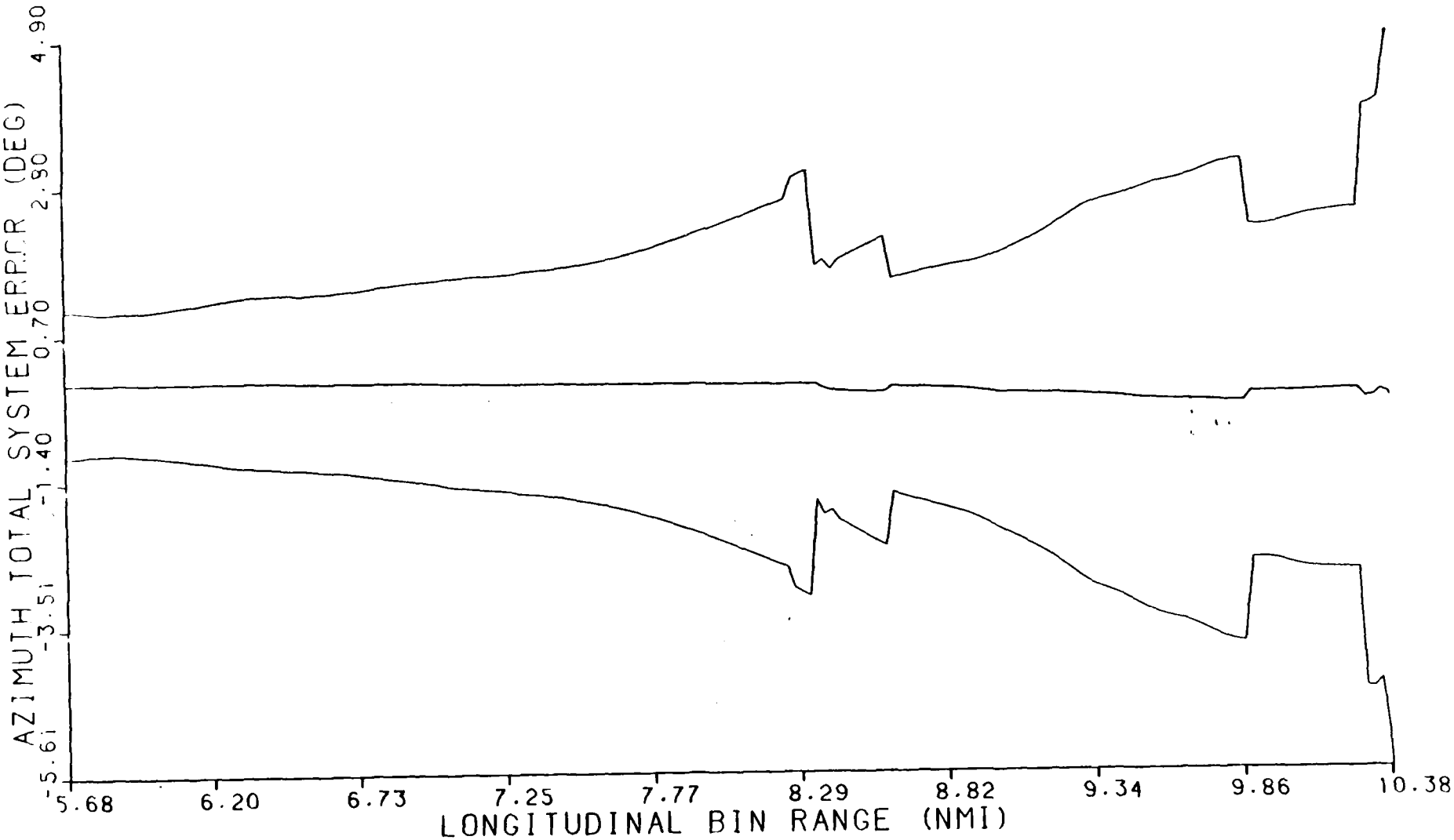
B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

KEY
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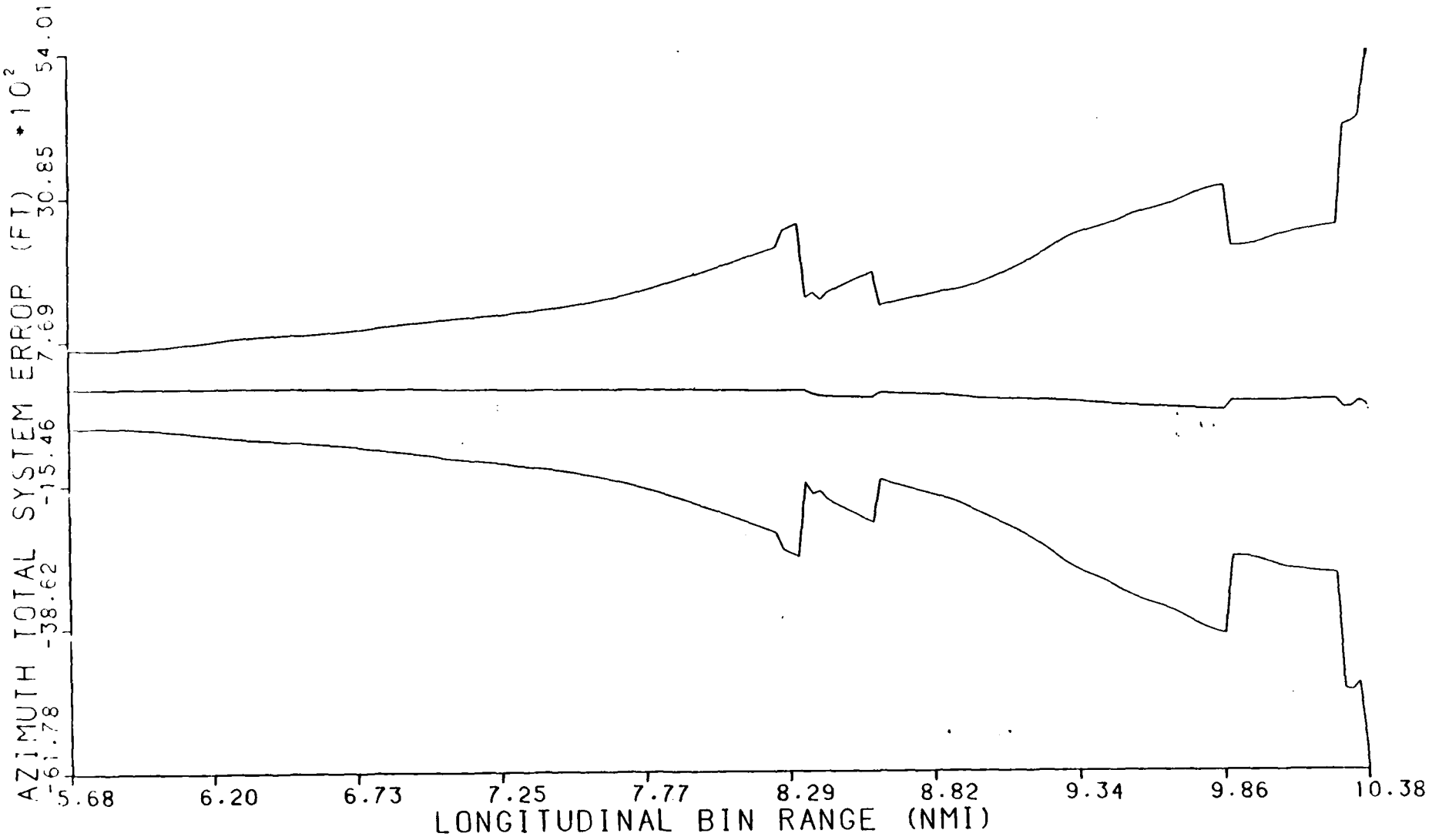
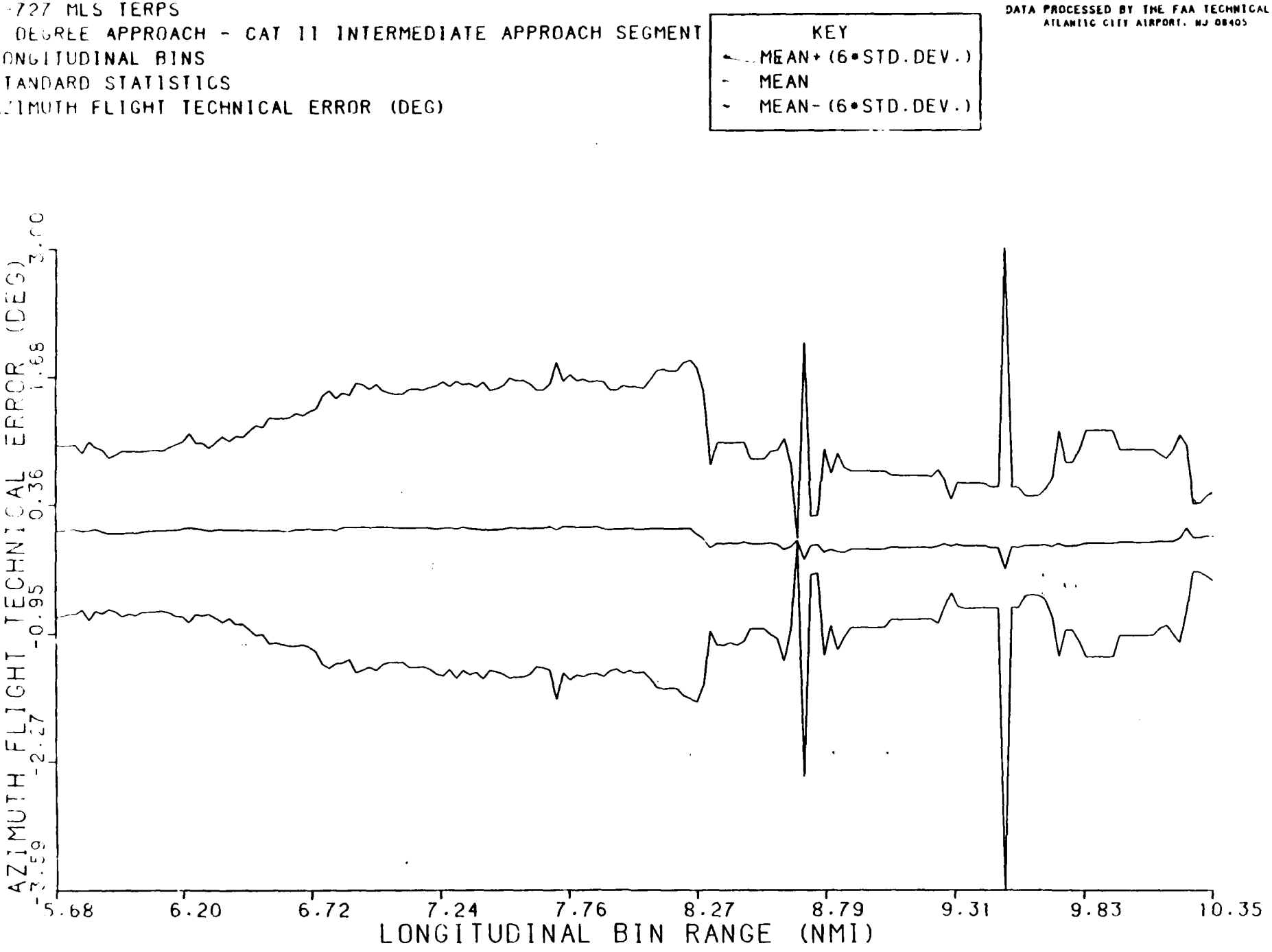
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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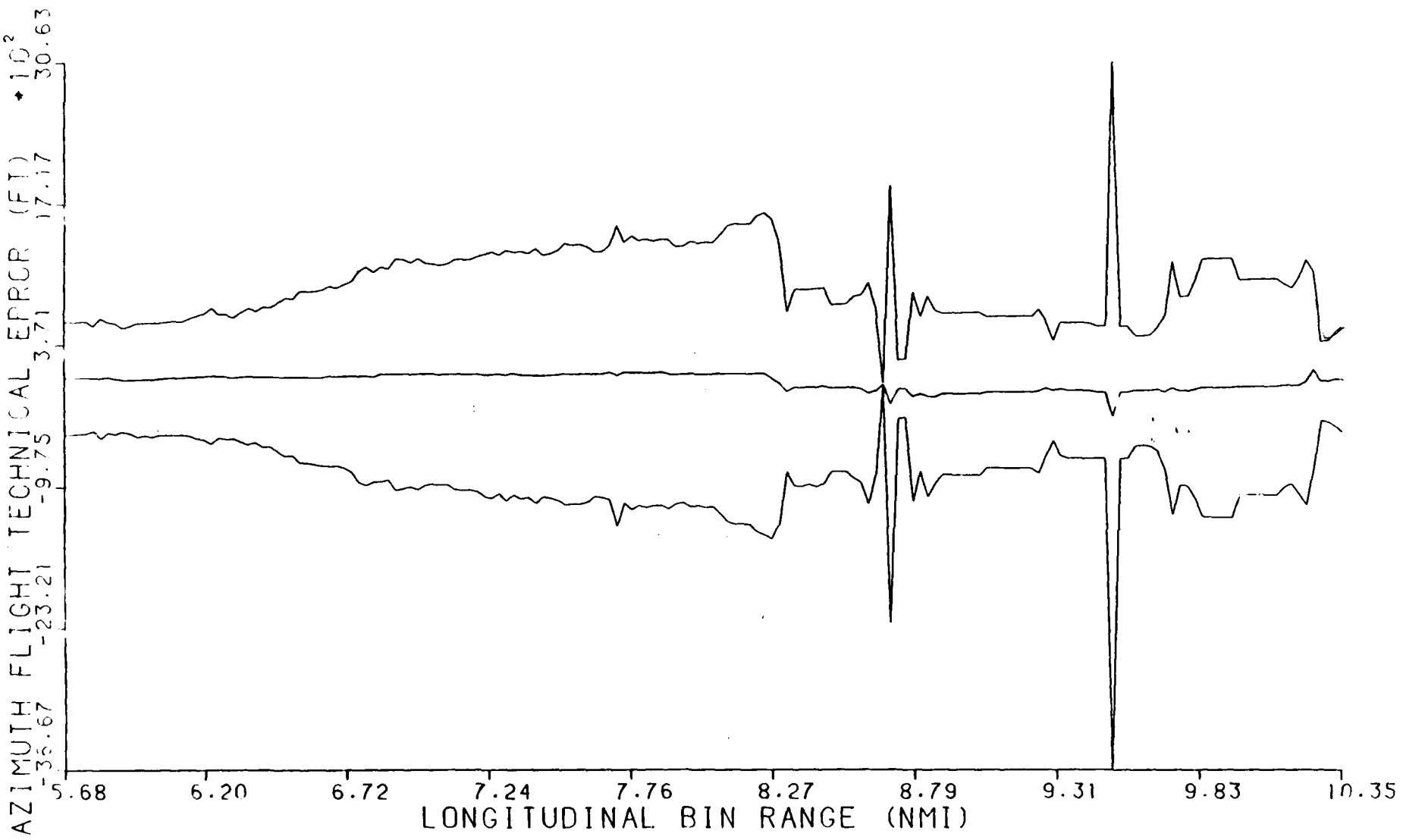
- MEAN
- MEAN-(6*STD.DEV.)



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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- MEAN
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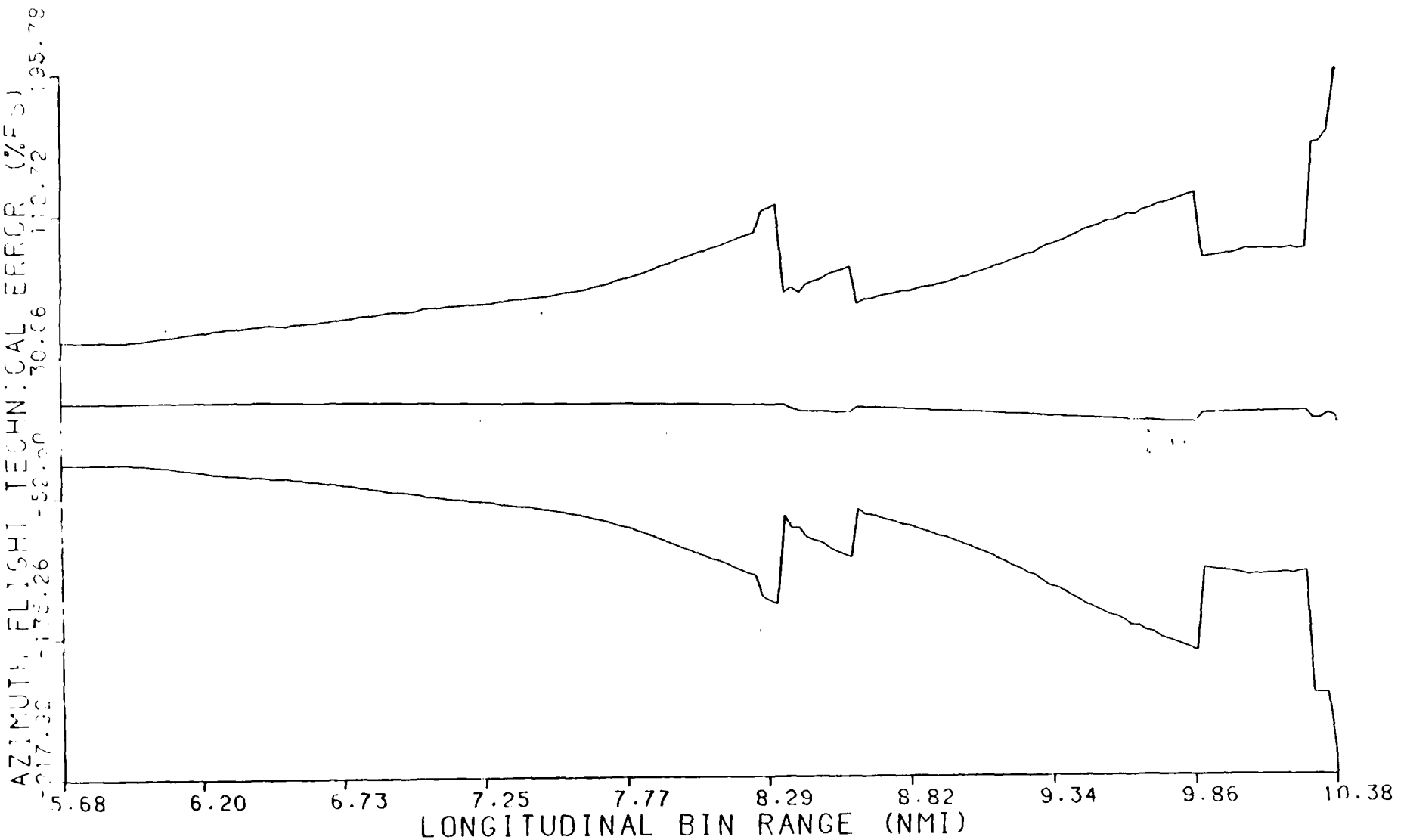
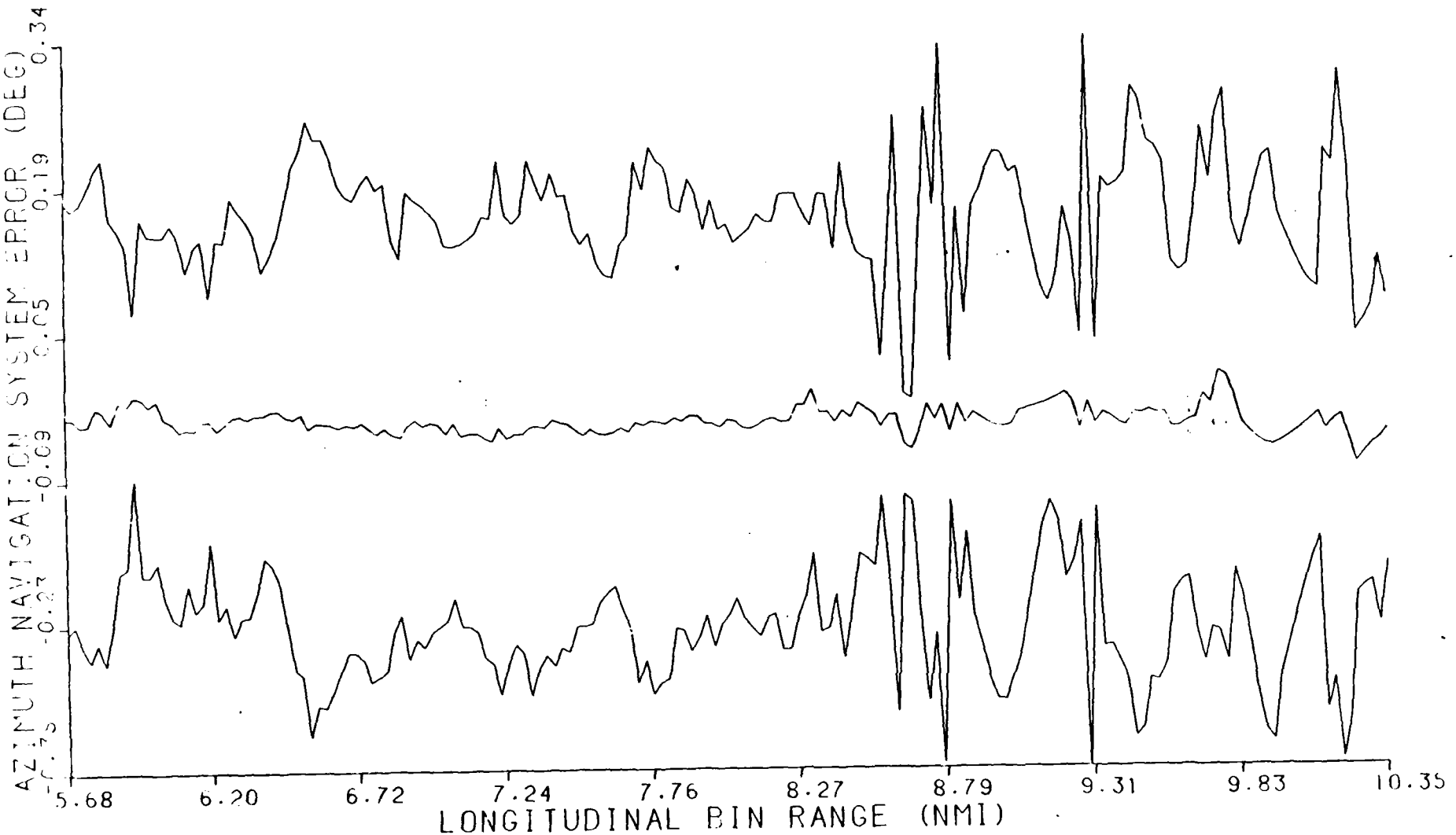


B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

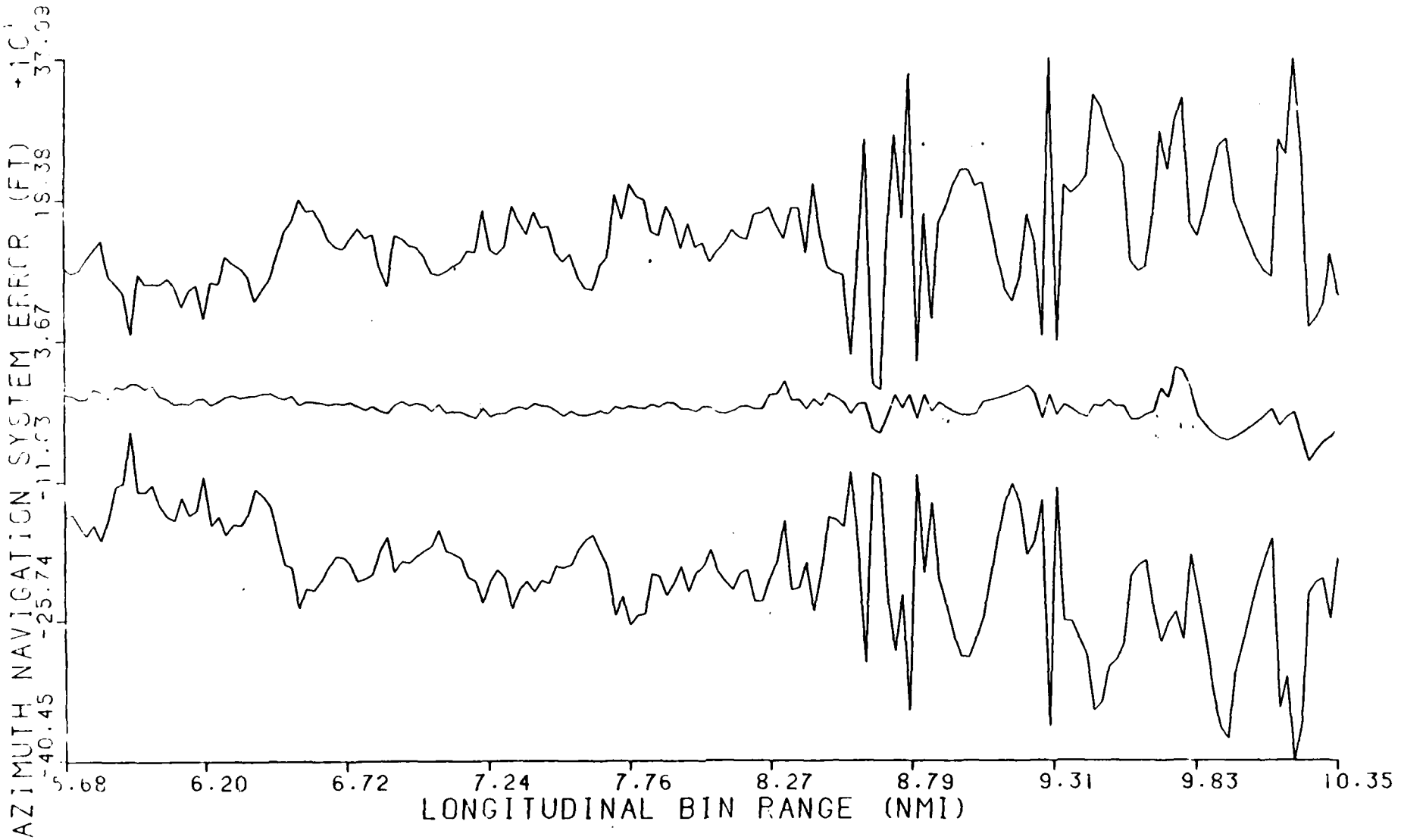
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

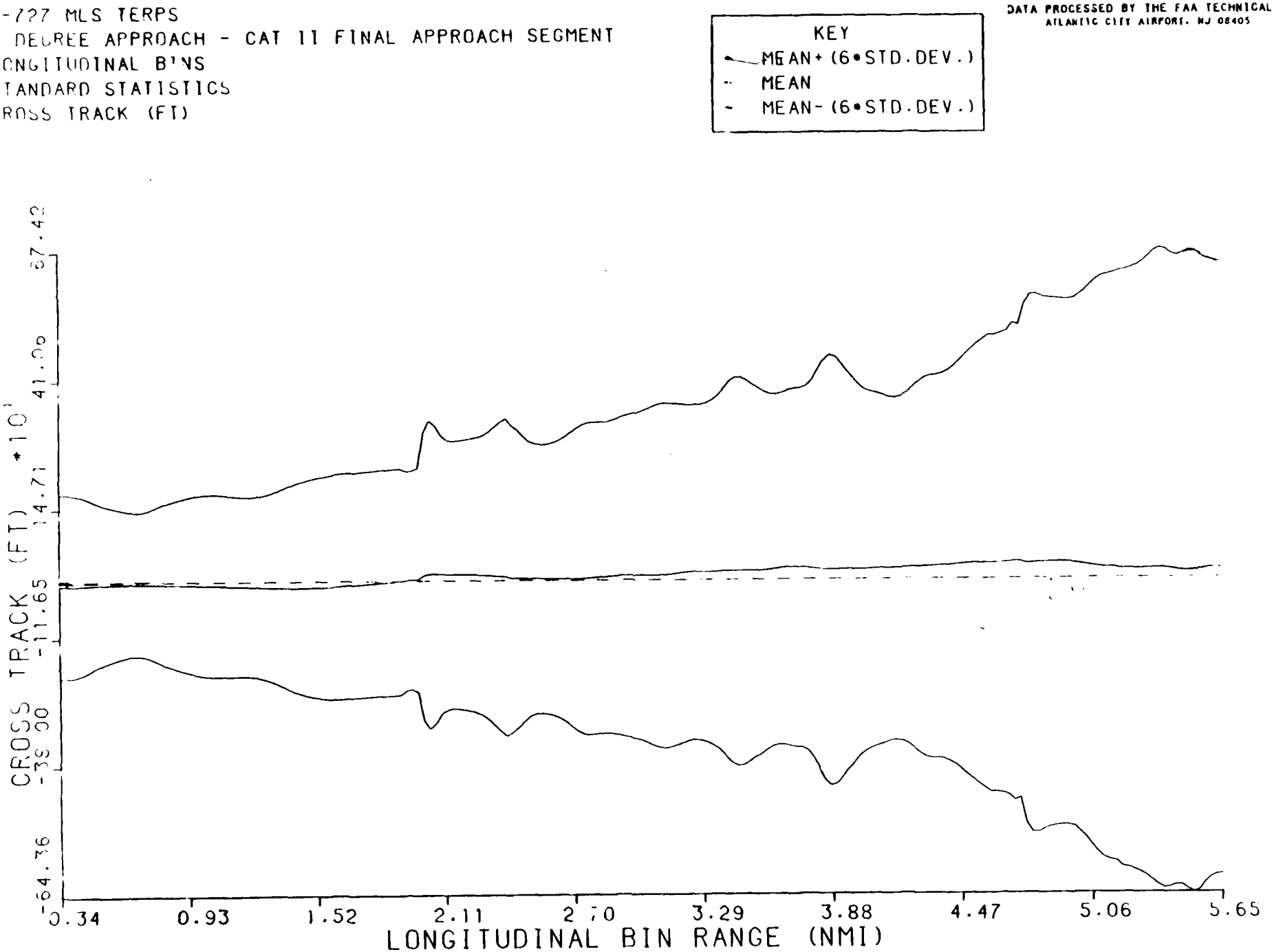
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
- MEAN+ (6*STD.DEV.)
- MEAN
- MEAN- (6*STD.DEV.)



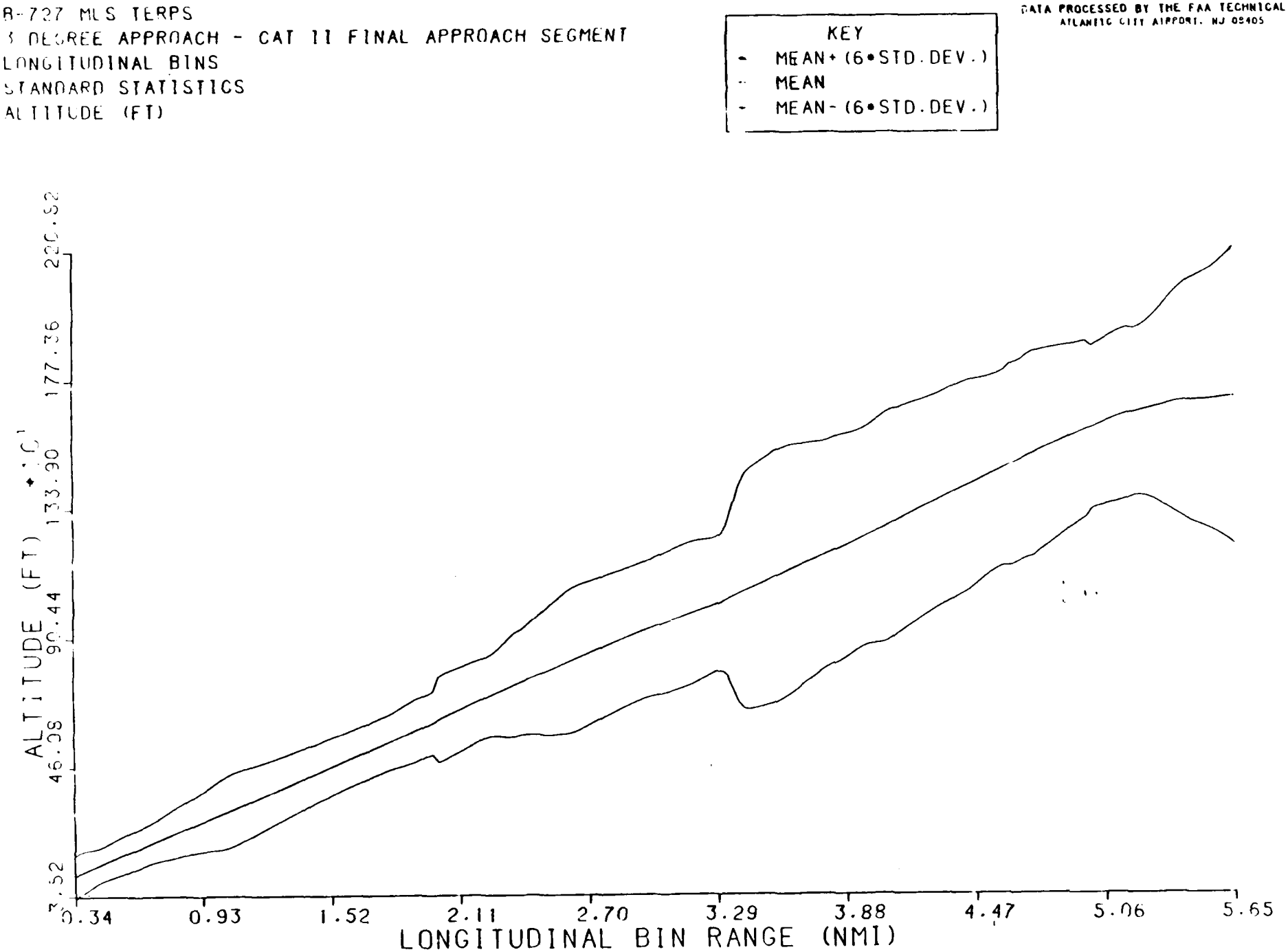
B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



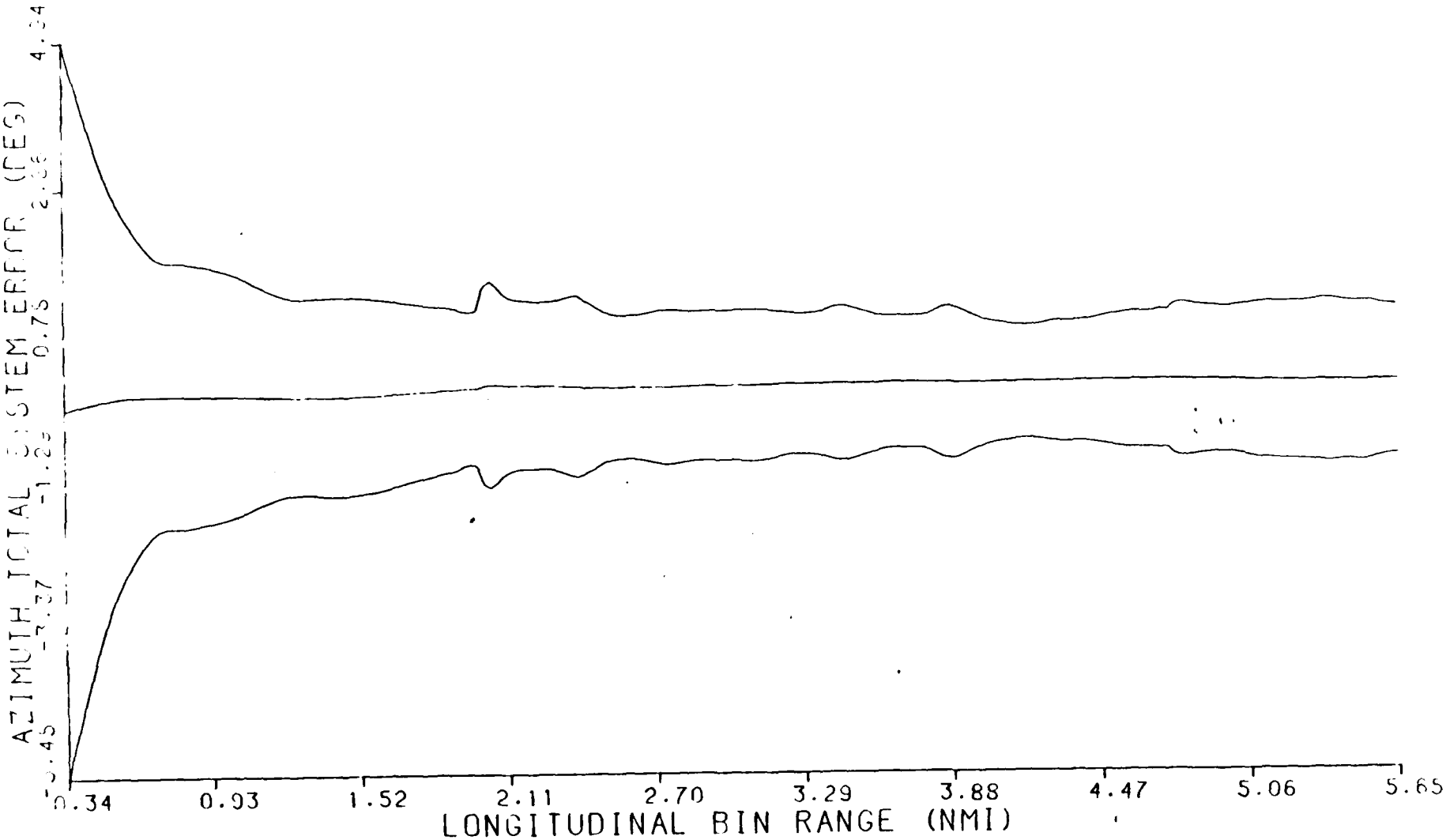
B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

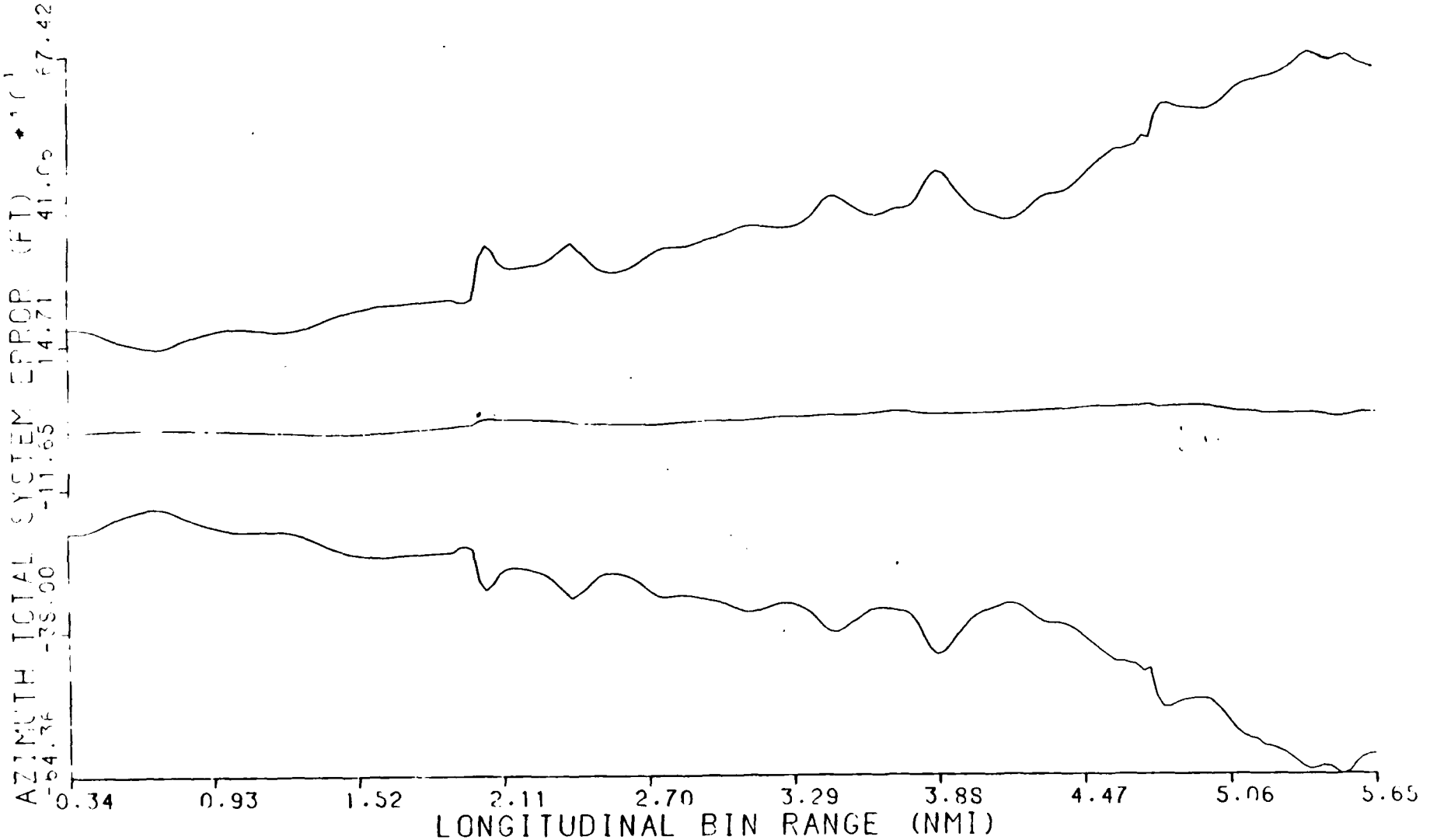
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-72[illegible] MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

KEY
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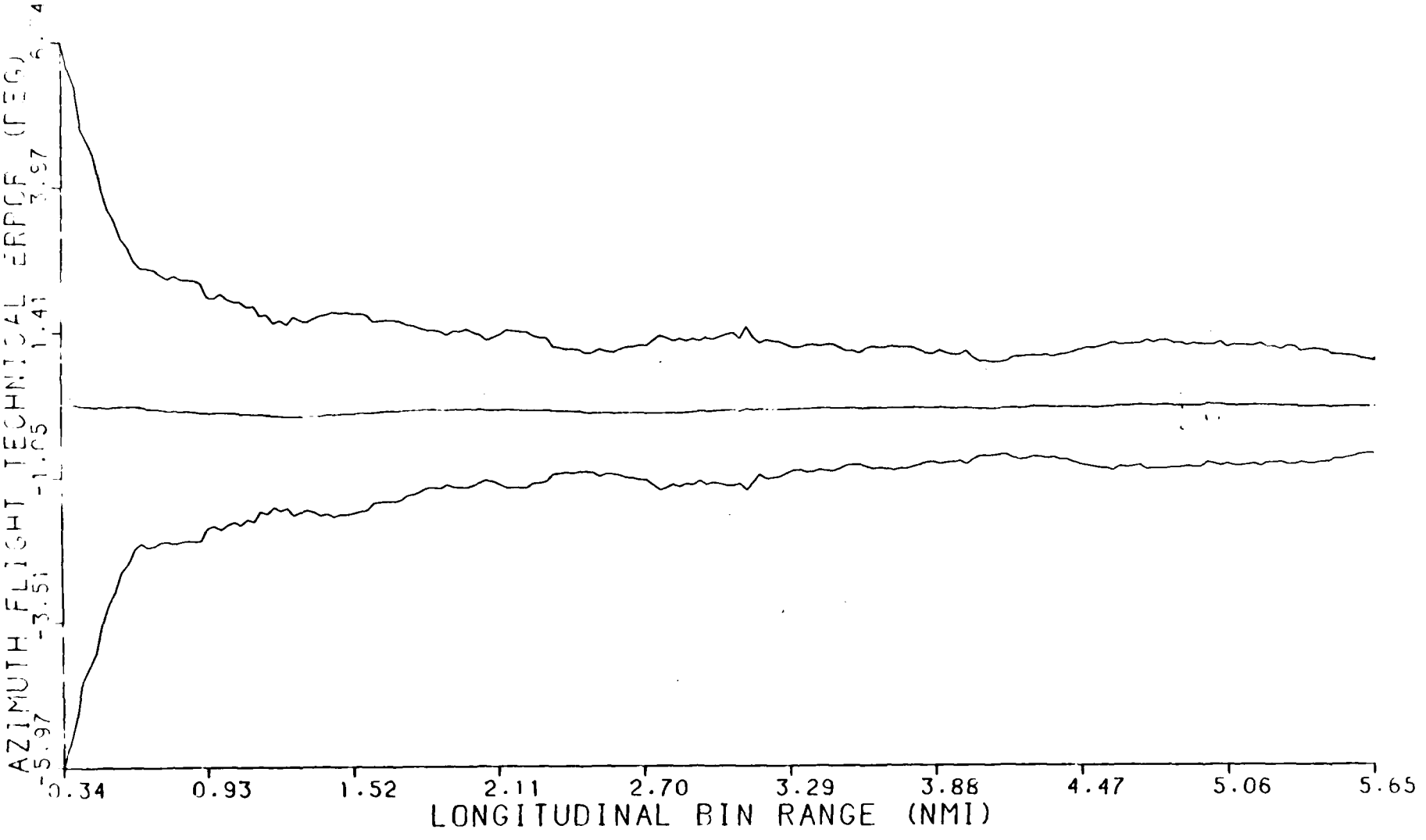
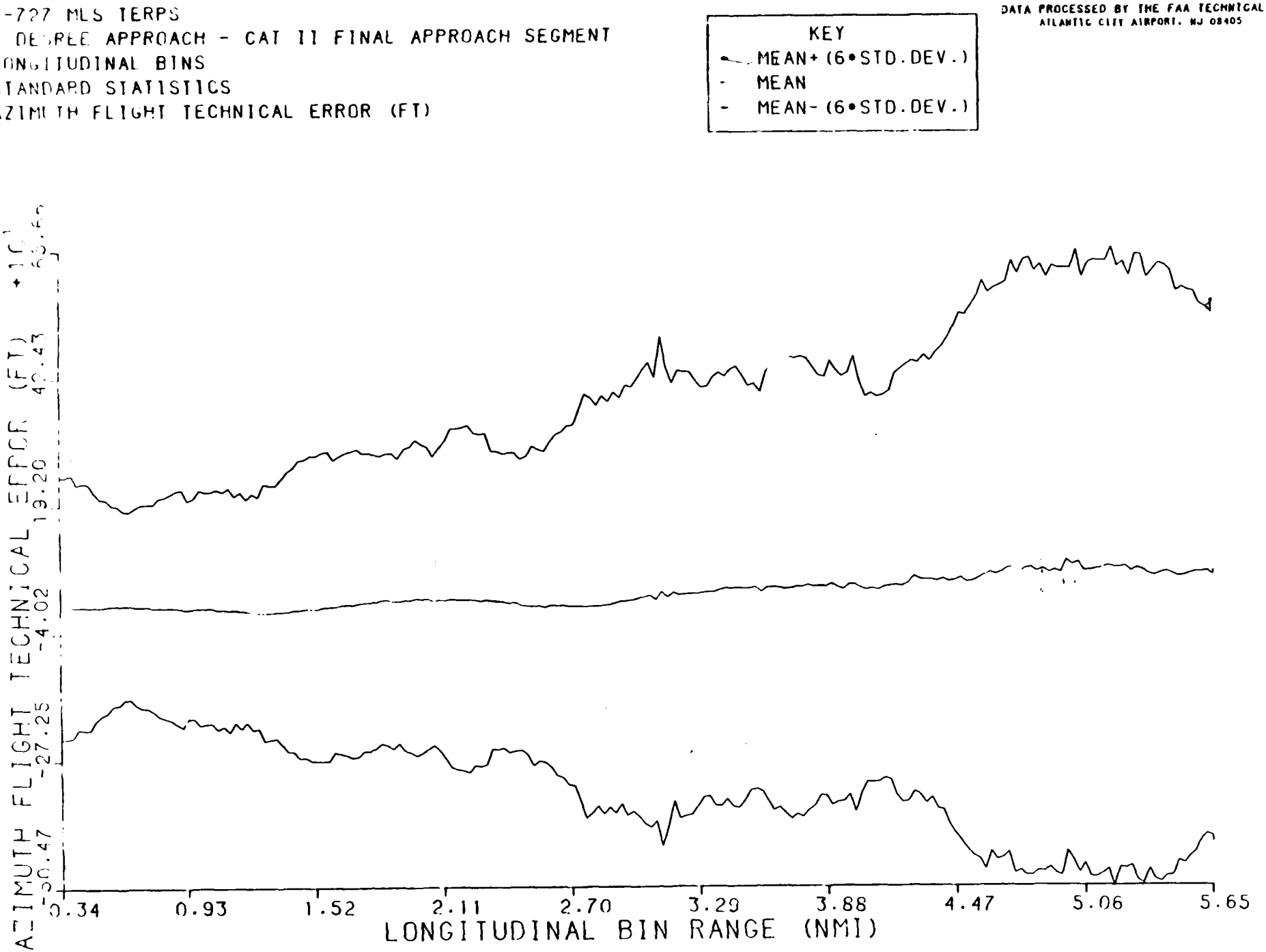
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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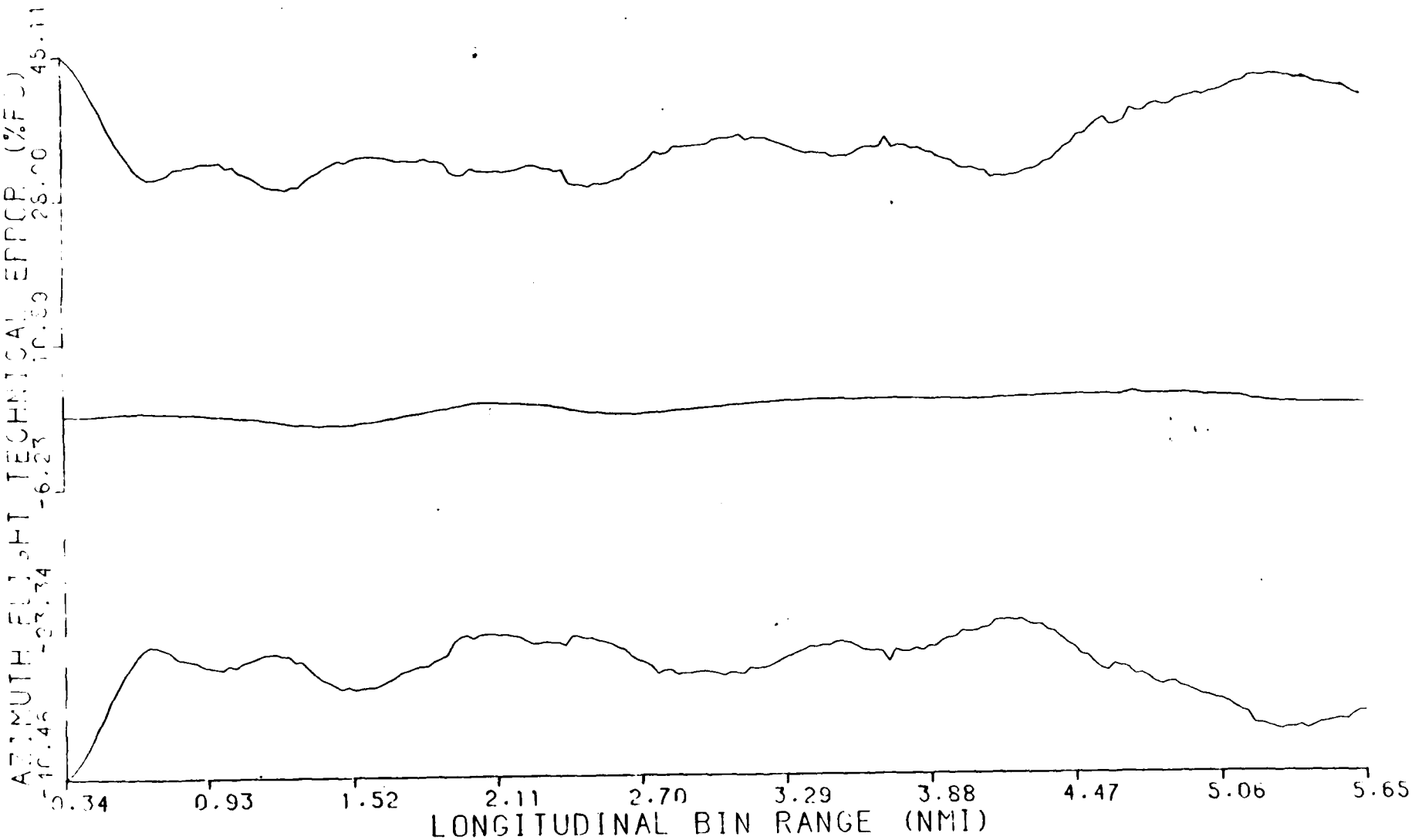
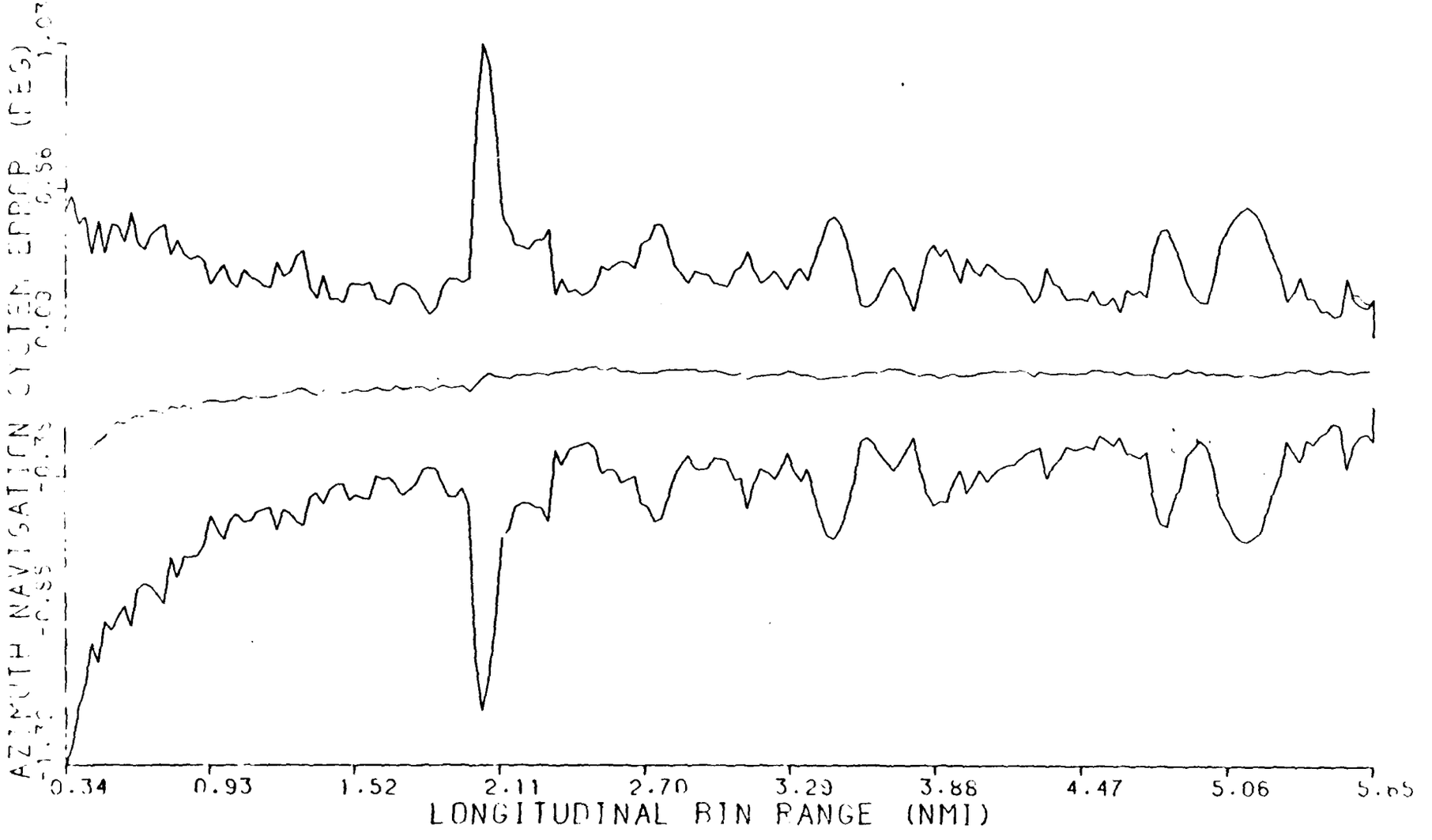
MEAN
MEAN - (6 • STD. DEV.)



B 727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

KEY
- MEAN+(6*STD.DEV.)
-- MEAN
- MEAN-(6*STD.DEV.)

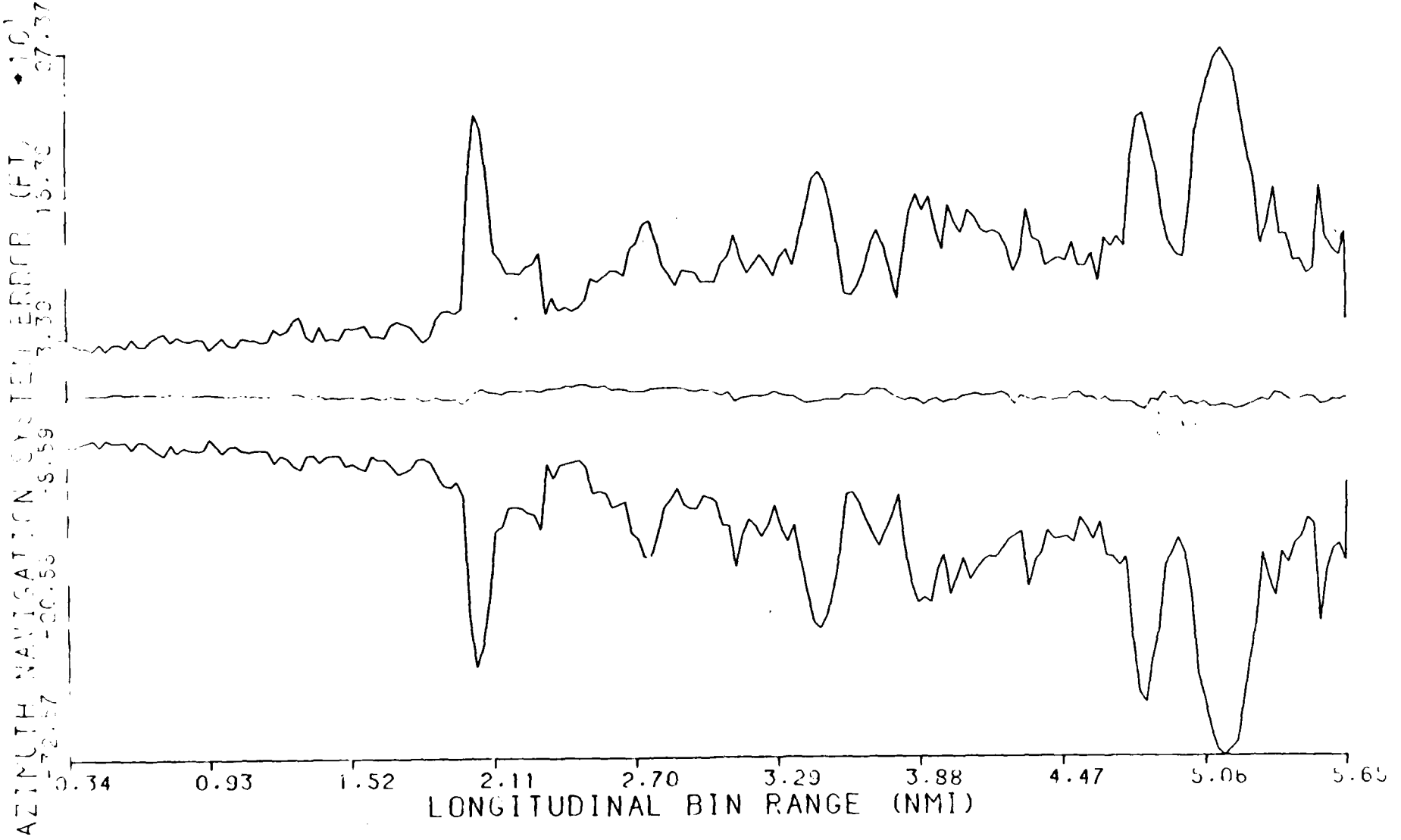
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

KEY
- MEAN+ (6*STD.DEV.)
- MEAN
- MEAN- (6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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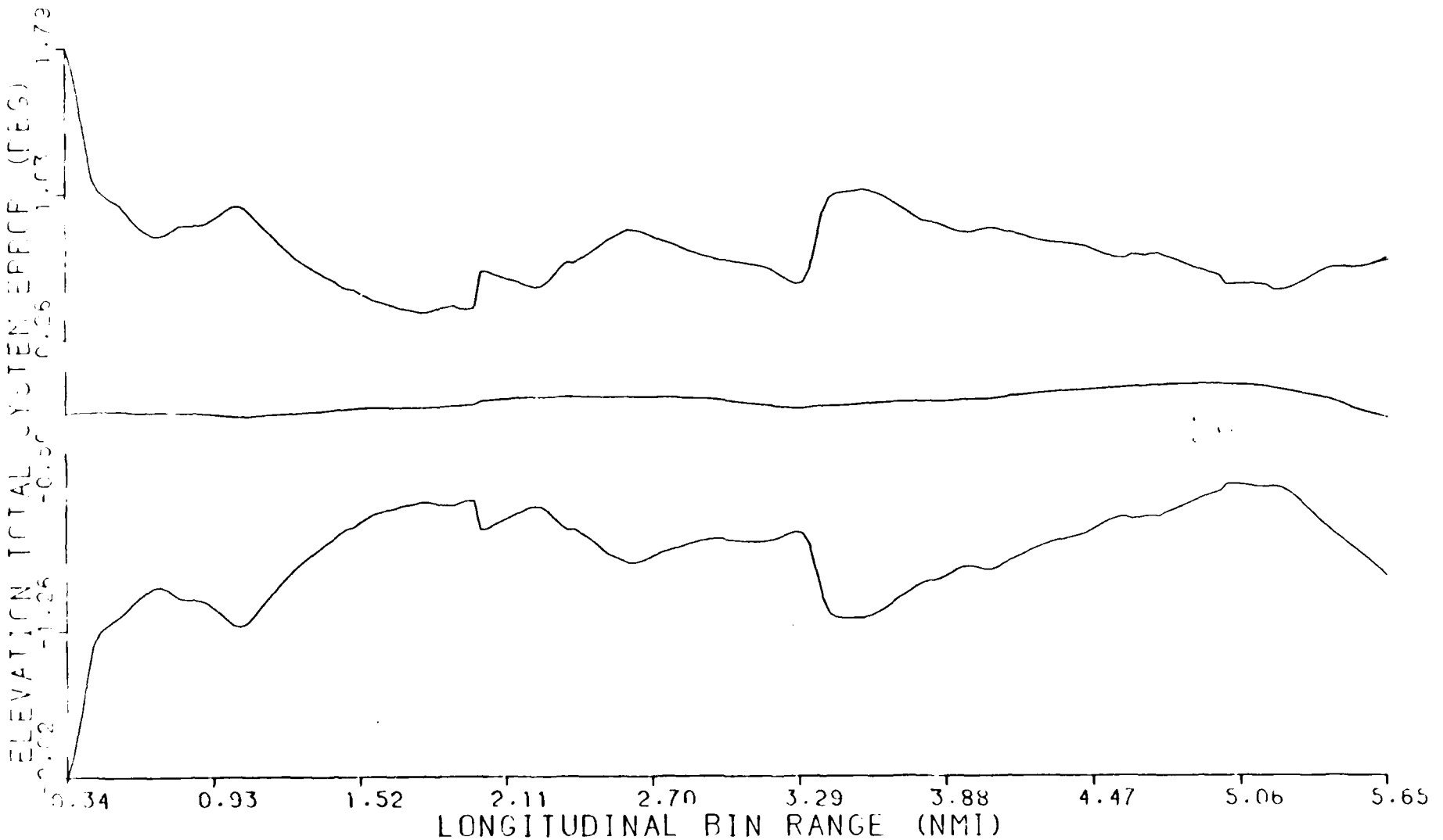
- MEAN
- MEAN-(6*STD.DEV.)



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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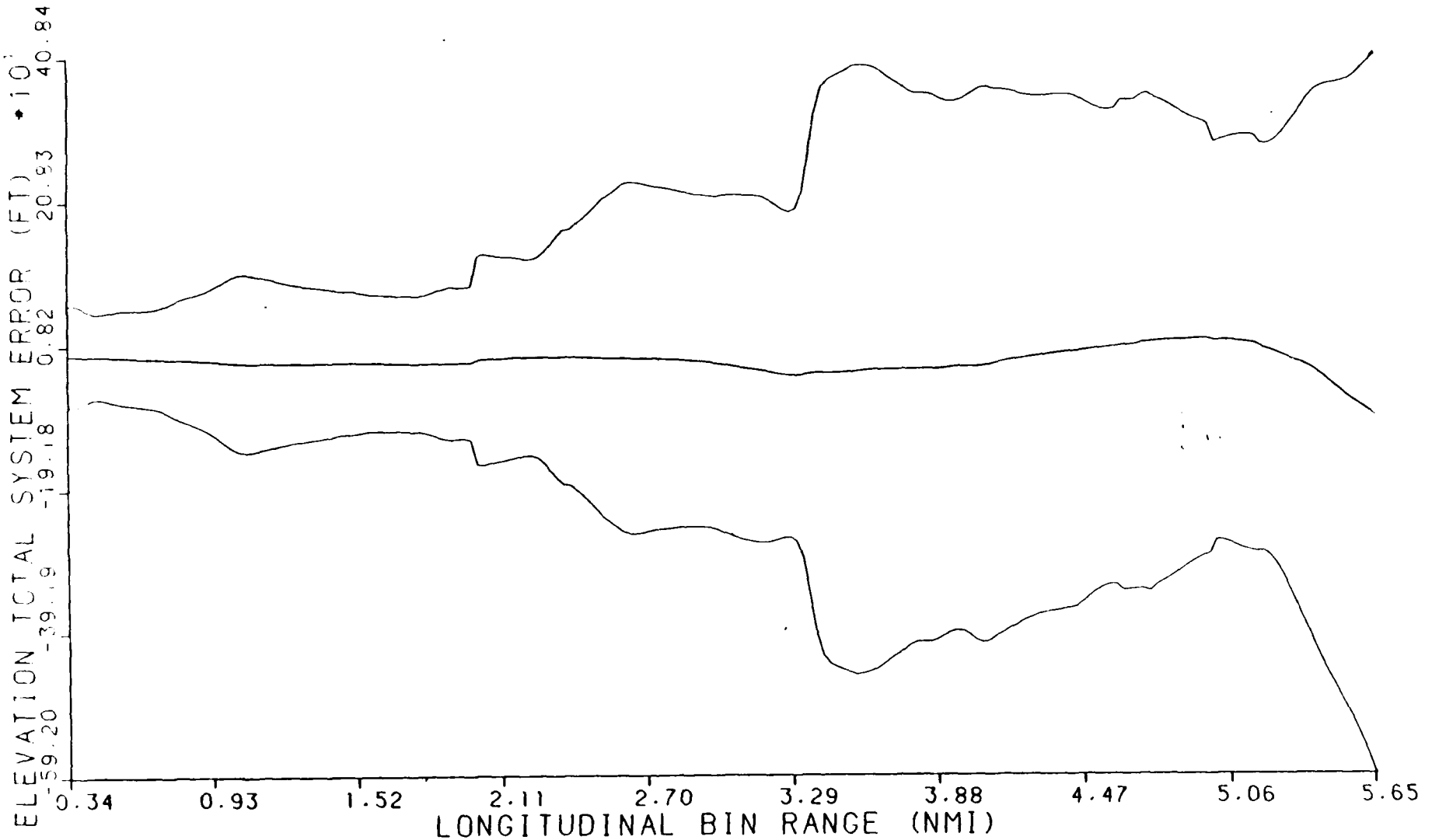
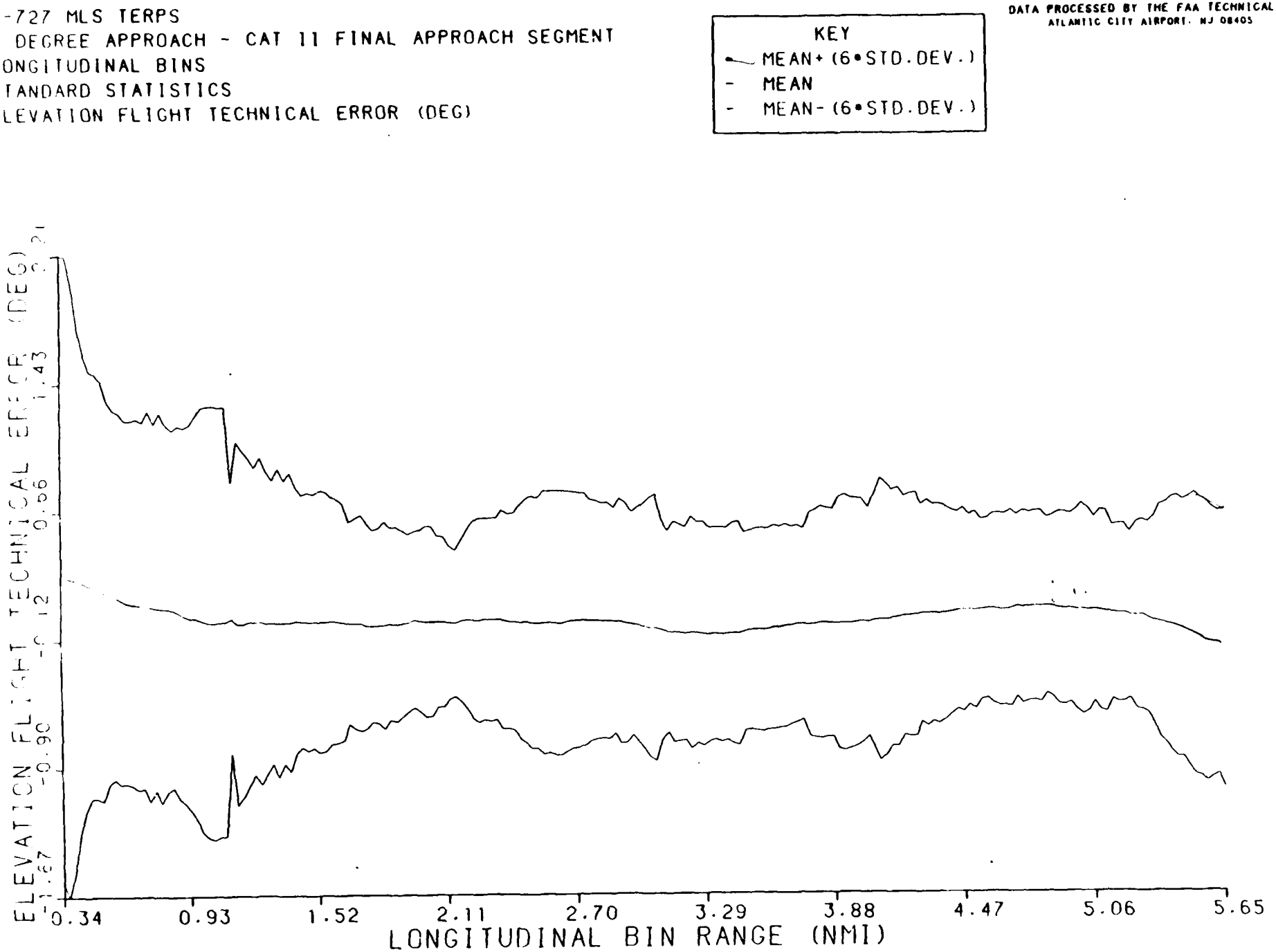
MEAN
MEAN- (6*STD.DEV.)



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (DEG)

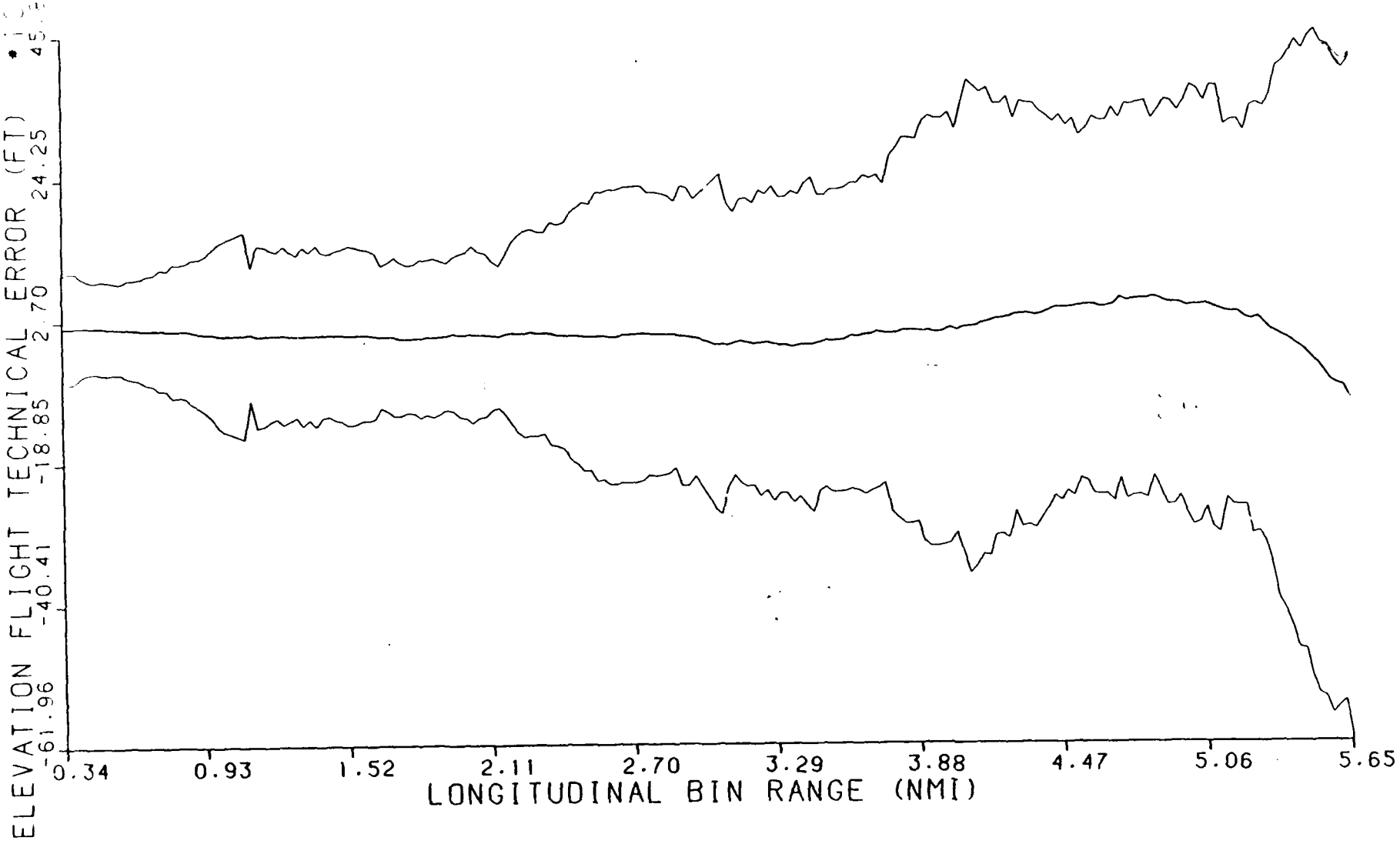
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

APPROACH - CAT II FINAL APPROACH SEGMENT
NAL BINS
TATISTICS
N FLIGHT TECHNICAL ERROR (FT)

KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

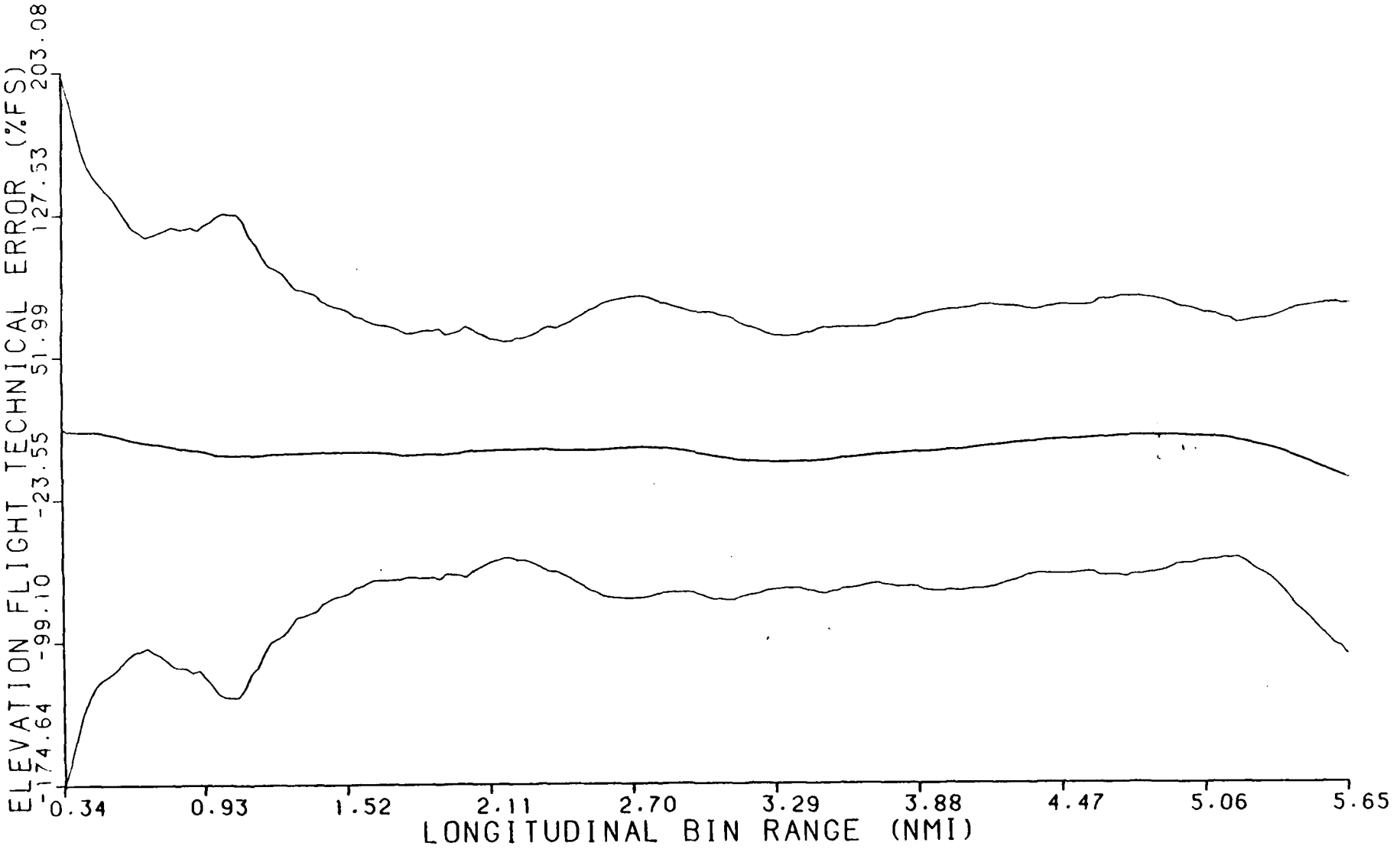


H-51

B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (%FS)

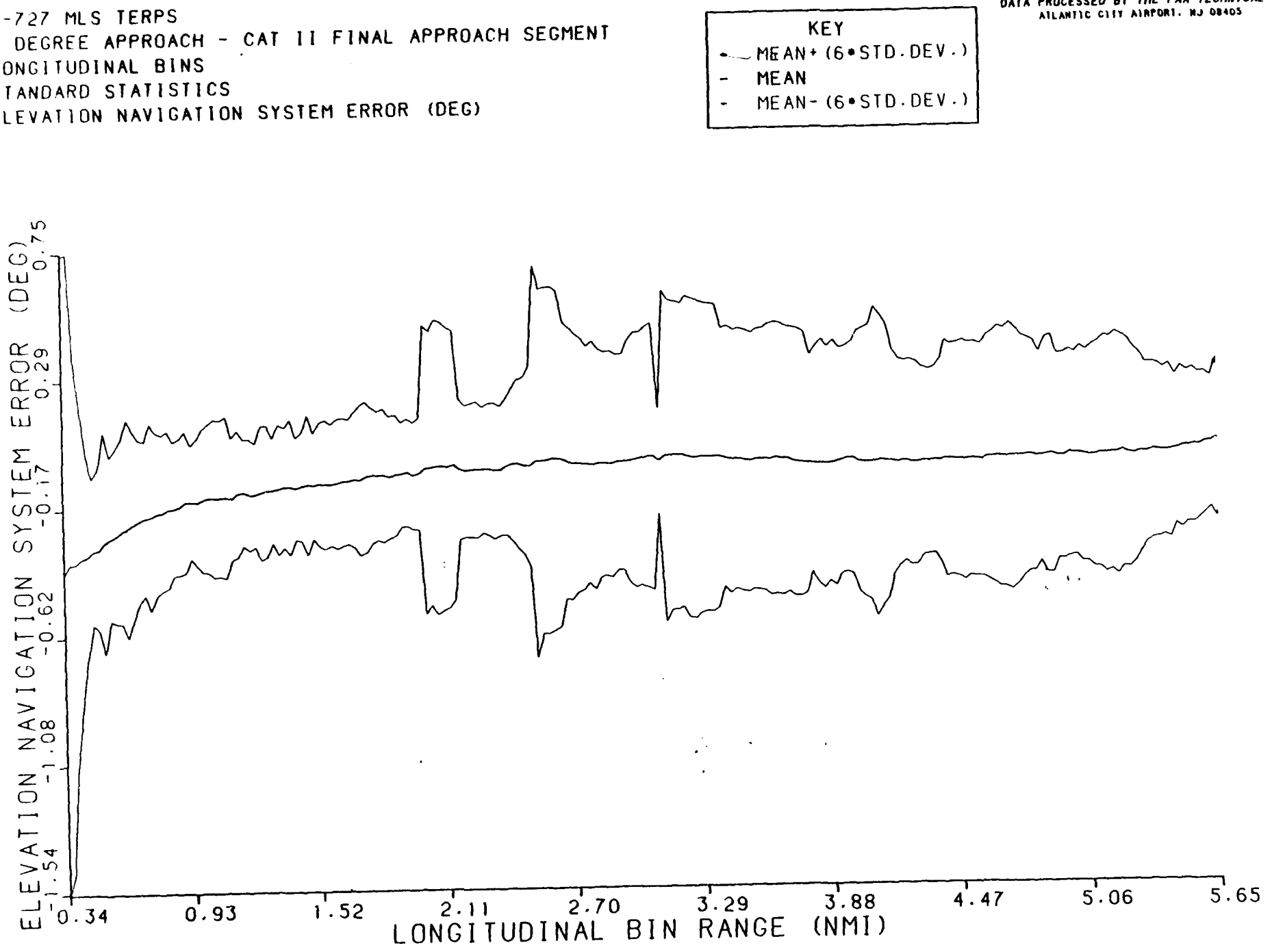
KEY
- MEAN+ (6*STD.DEV.)
- MEAN
- MEAN- (6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (FT)

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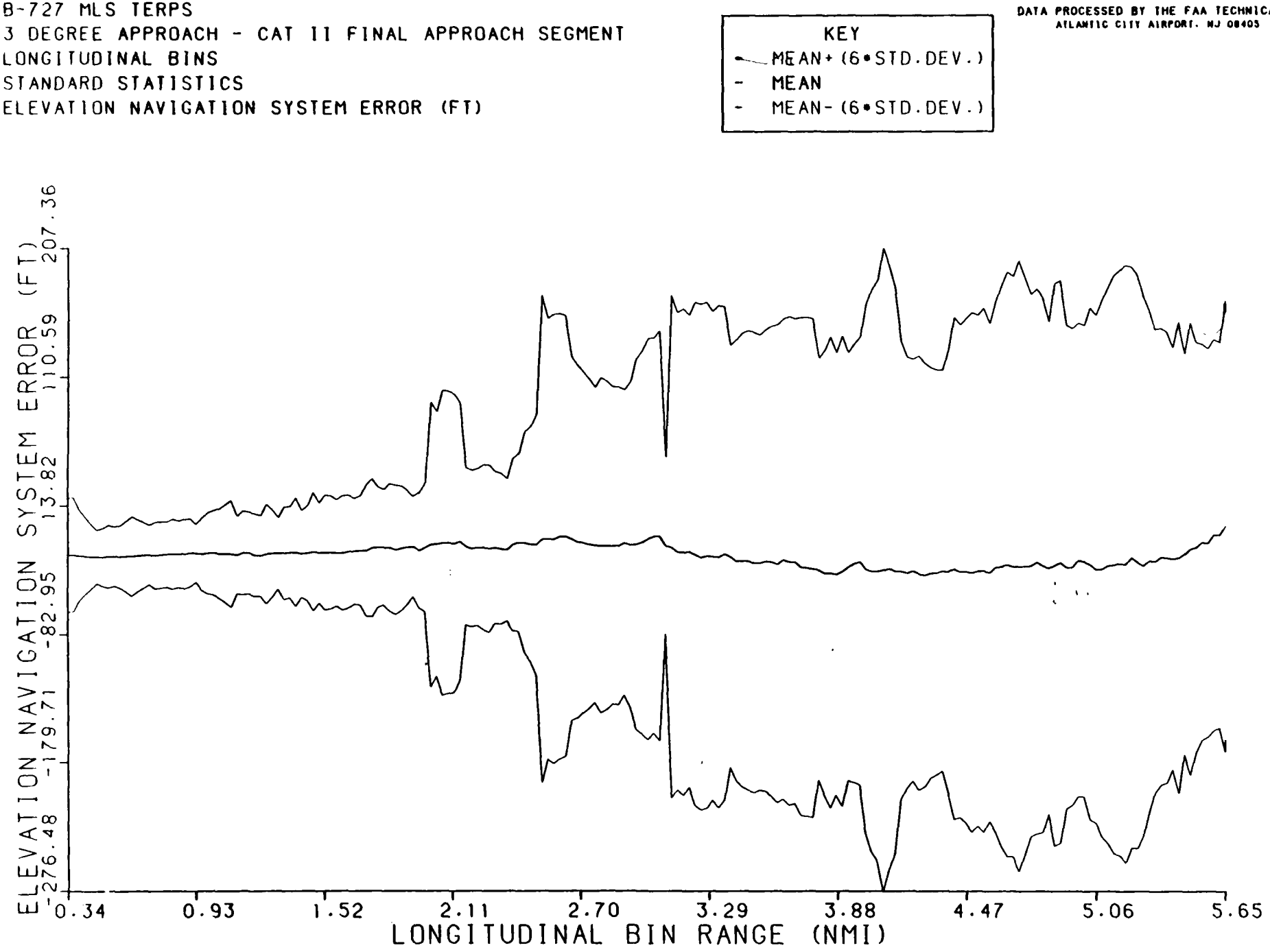
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

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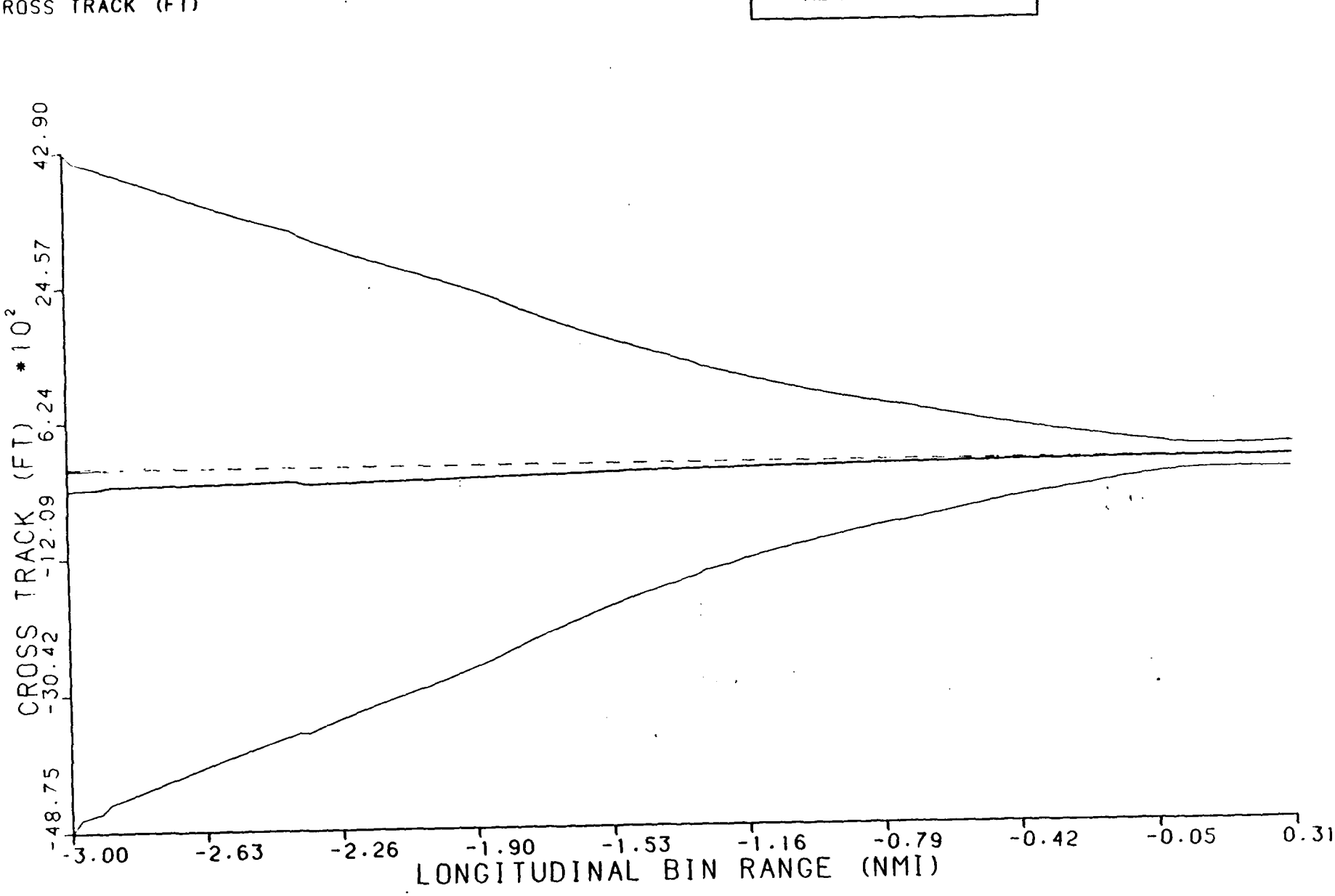
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

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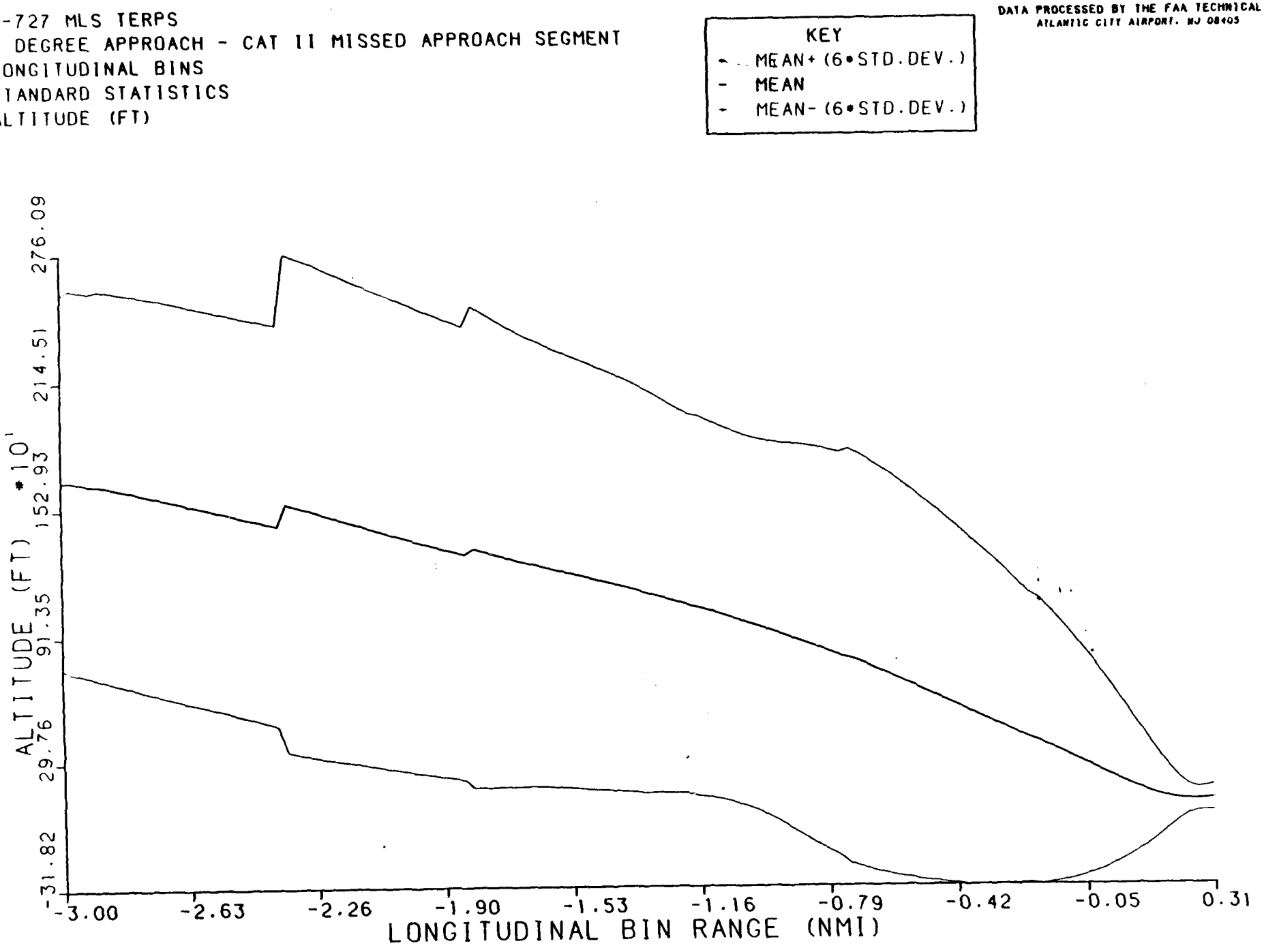
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3 DEGREE APPROACH - CAT II MISSED APPROACH SEGMENT
VERTICAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

KEY
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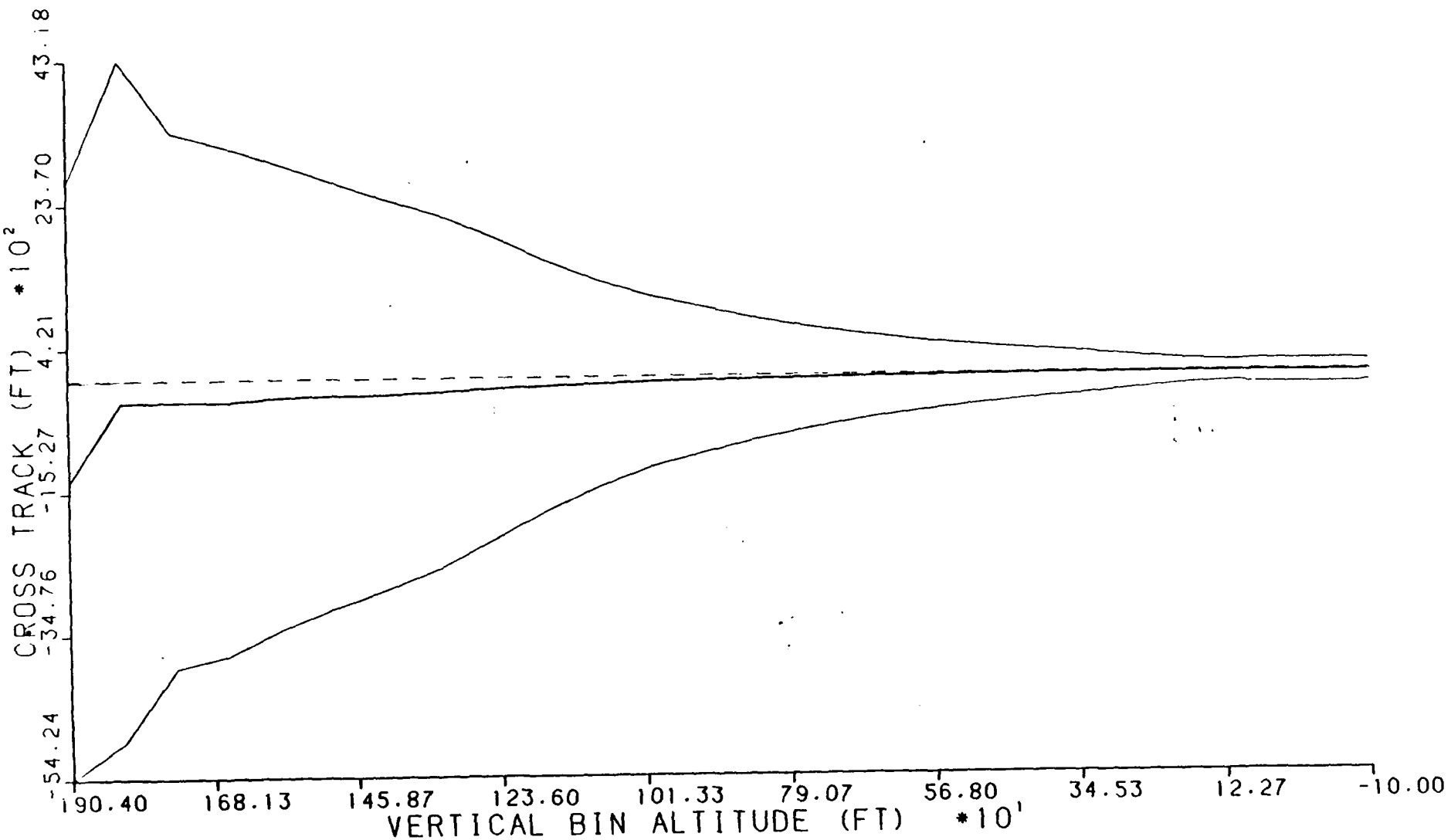
- MEAN
- MEAN- (6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

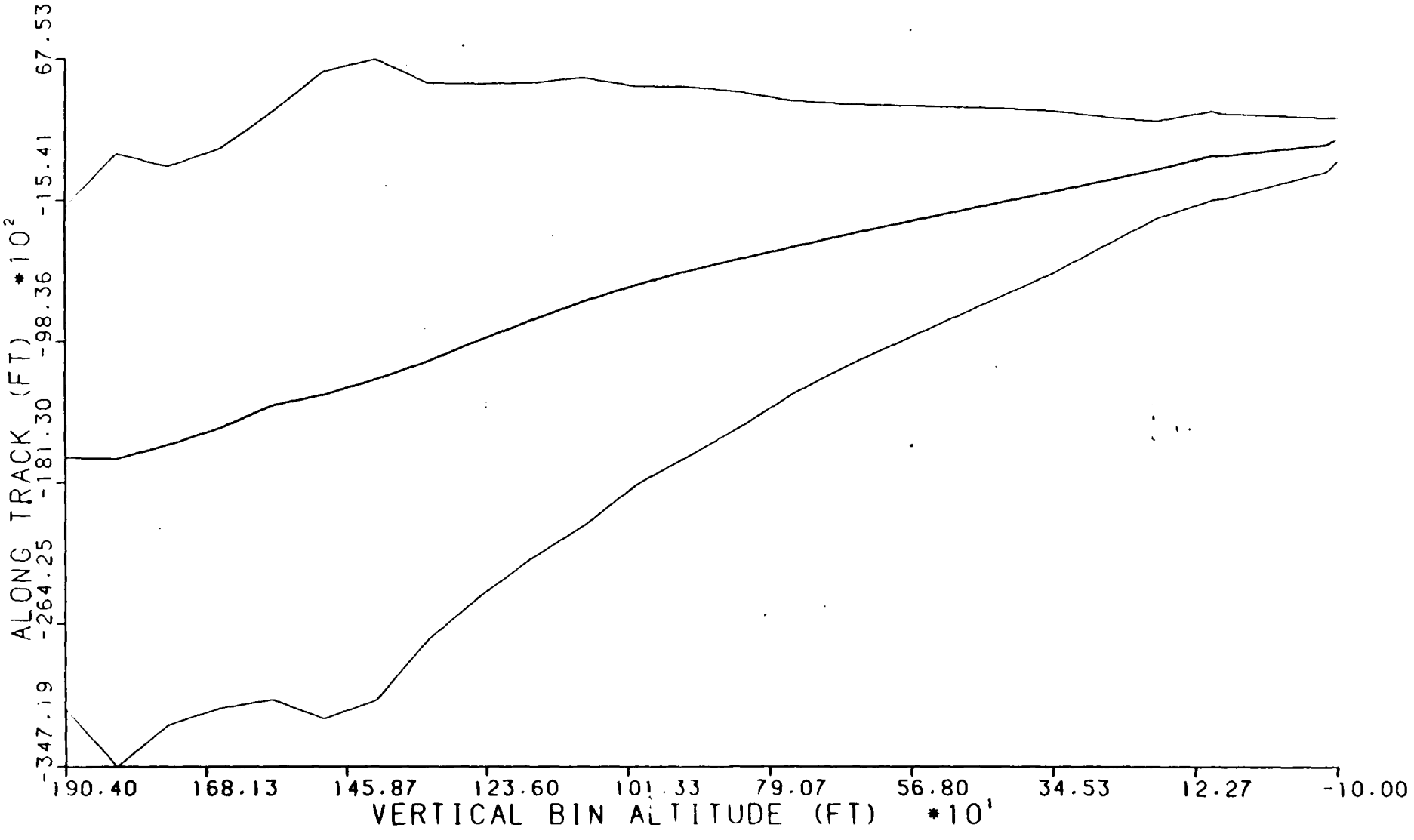


LS-H

B-727 MLS TERPS
3 DEGREE APPROACH - CAT II MISSED APPROACH SEGMENT
VERTICAL BINS
STANDARD STATISTICS
ALONG TRACK (FT)

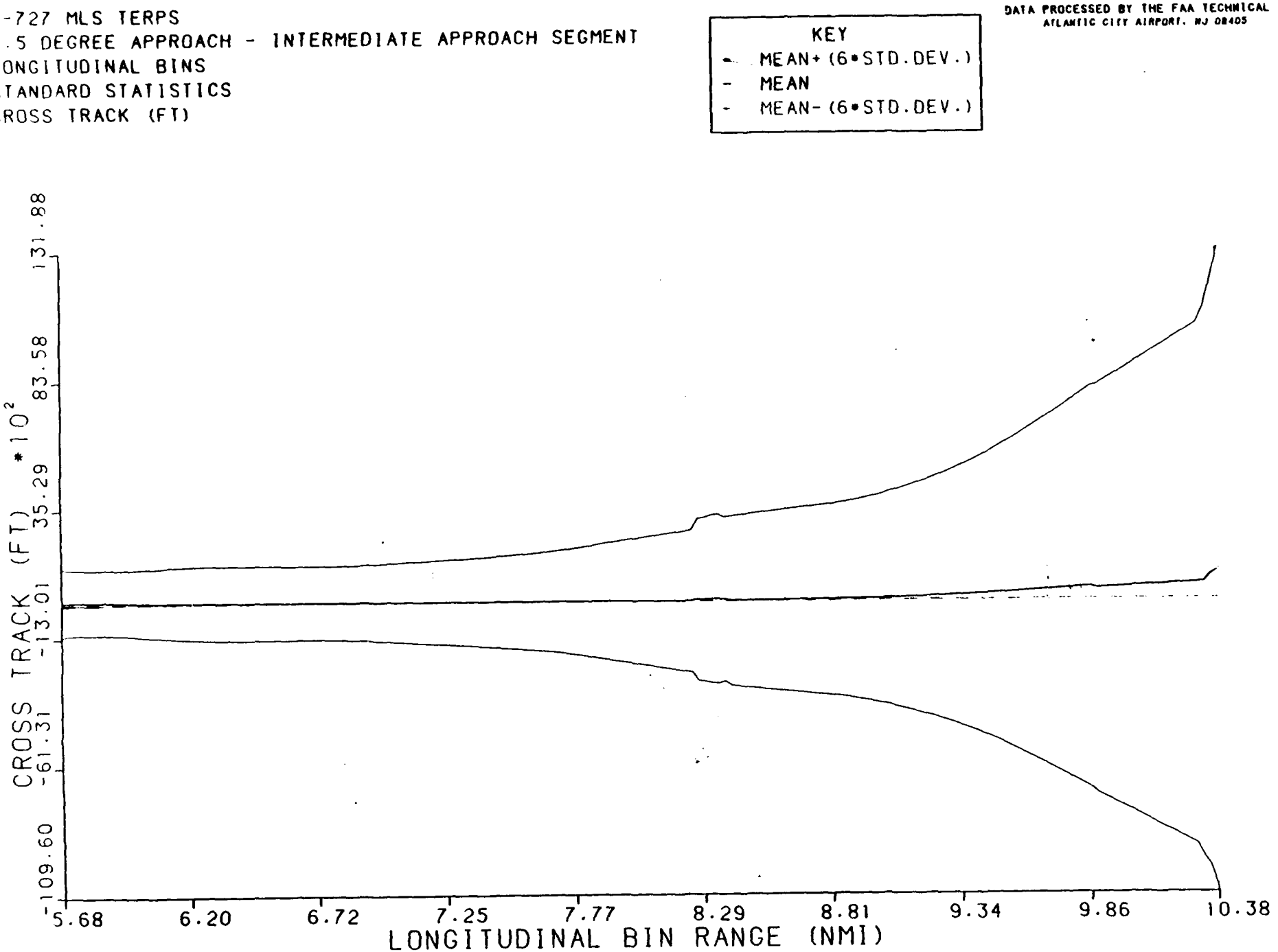
KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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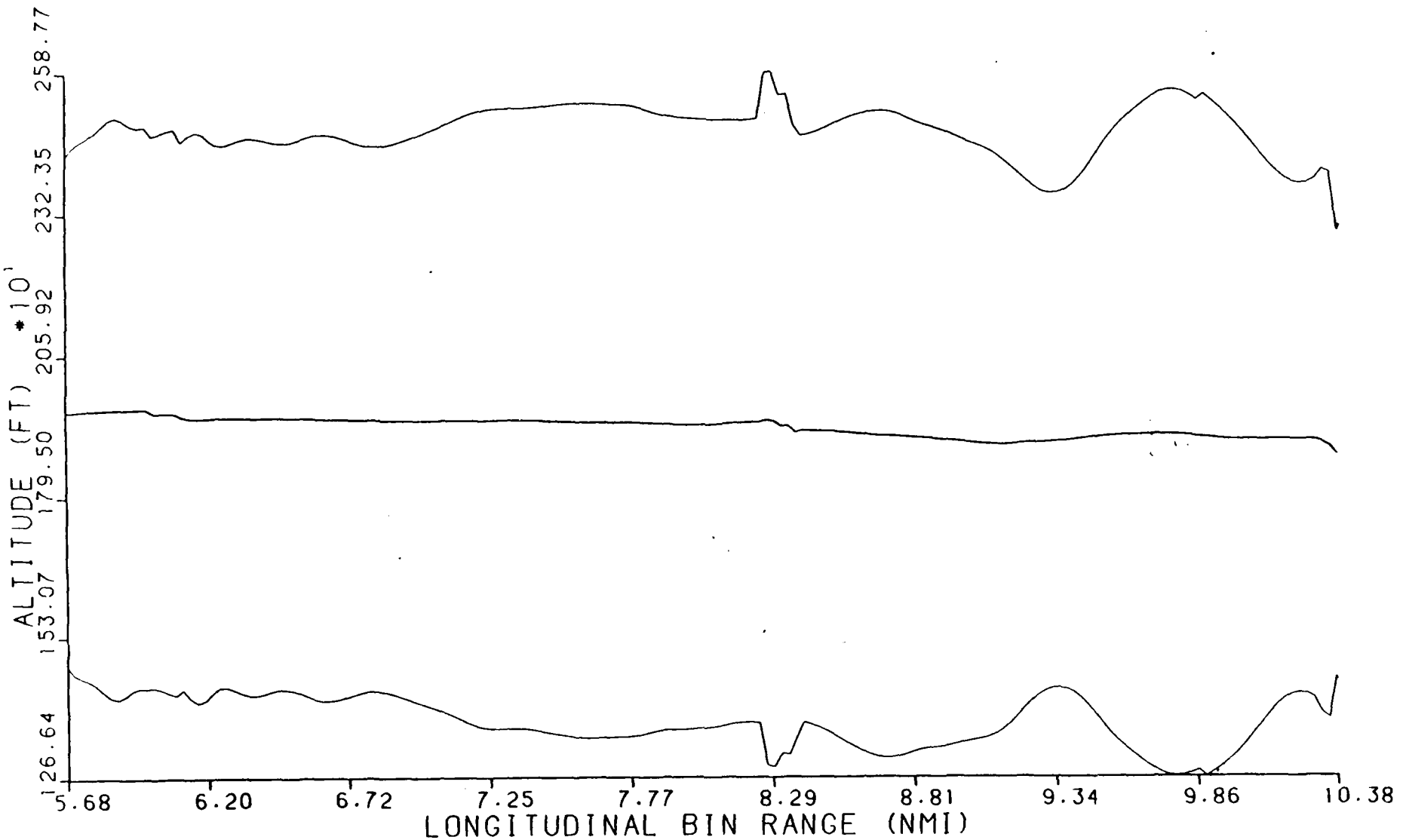
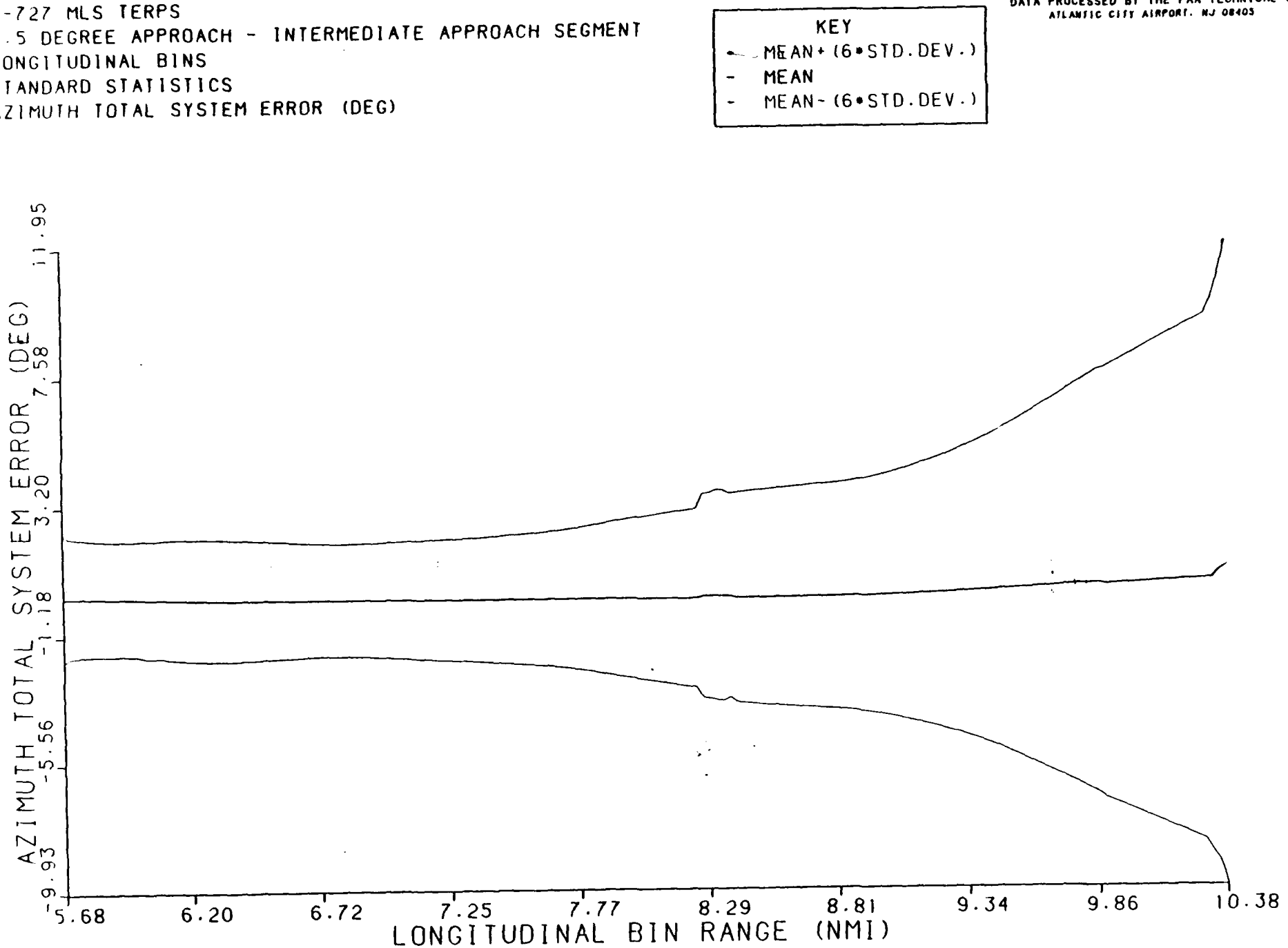
- MEAN
- MEAN-(6*STD.DEV.)



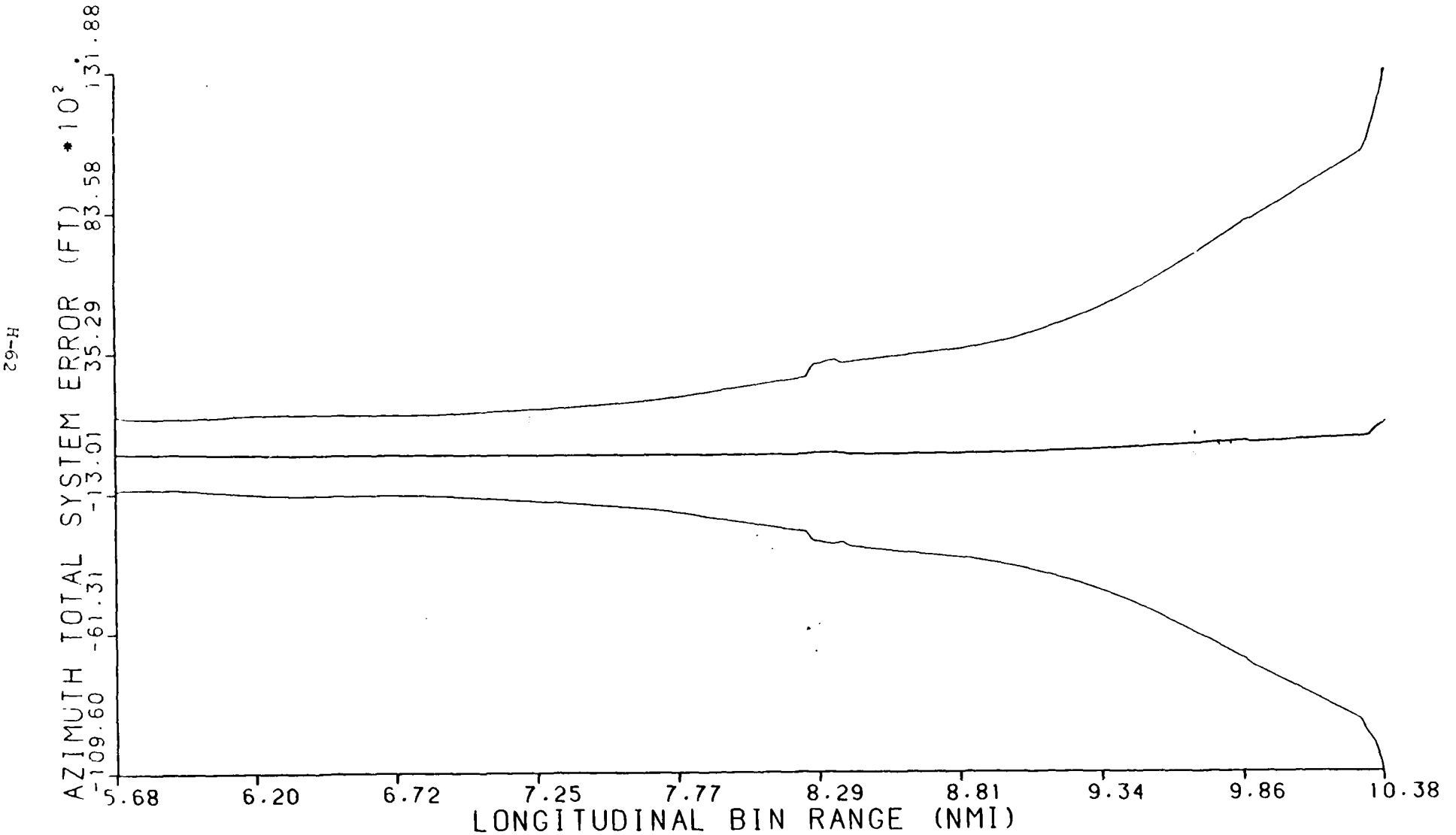
B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

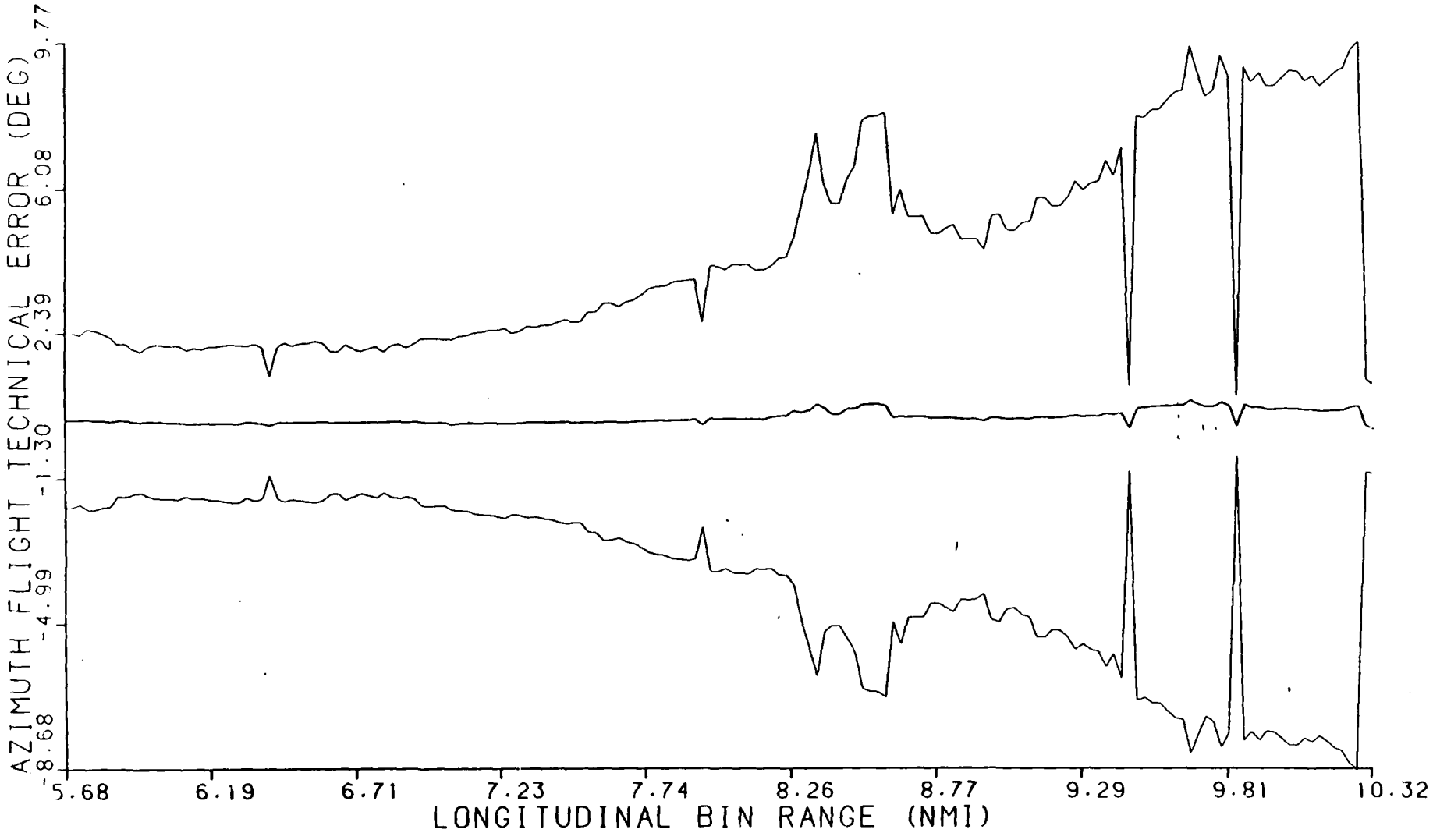
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

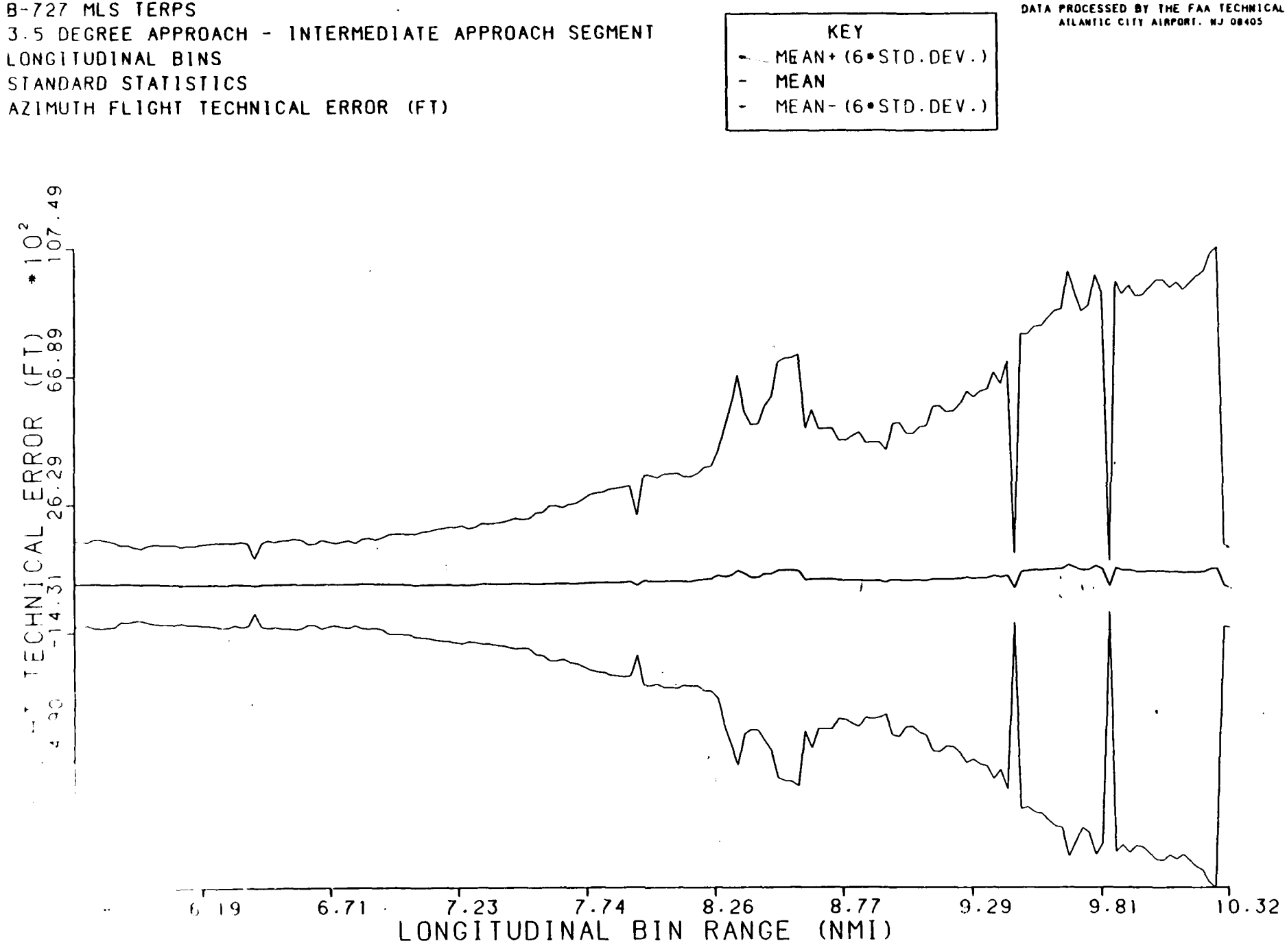
KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



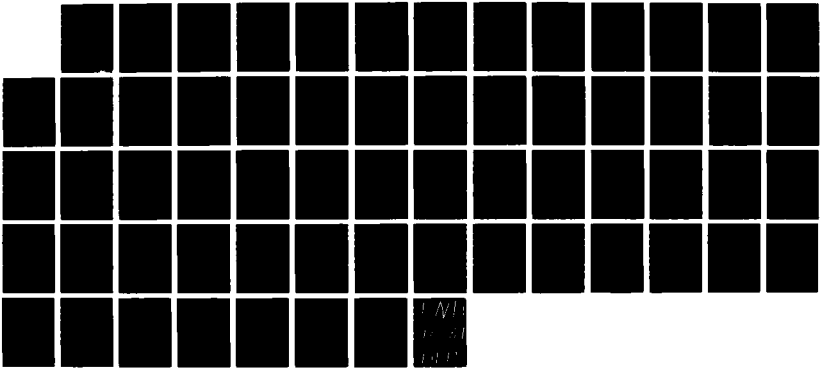
B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

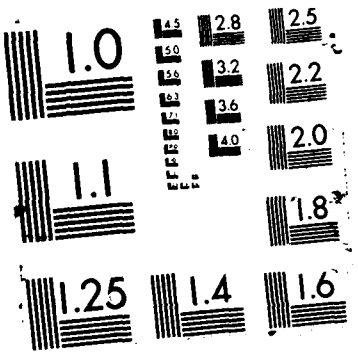
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



AD-A185 523 BOEING 727 MLS (MICROWAVE LANDING SYSTEM) TERMINAL INSTRUMENT PROCEDURES (..(U) FEDERAL AVIATION ADMINISTRATION TECHNICAL CENTER ATLANTIC CIT.. 3/3

UNCLASSIFIED E J PUGACZ MAY 87 DOT/FAA/CT-TN87/9 F/G 17/7.3 NL

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1.1
1.25
1.4
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1.8
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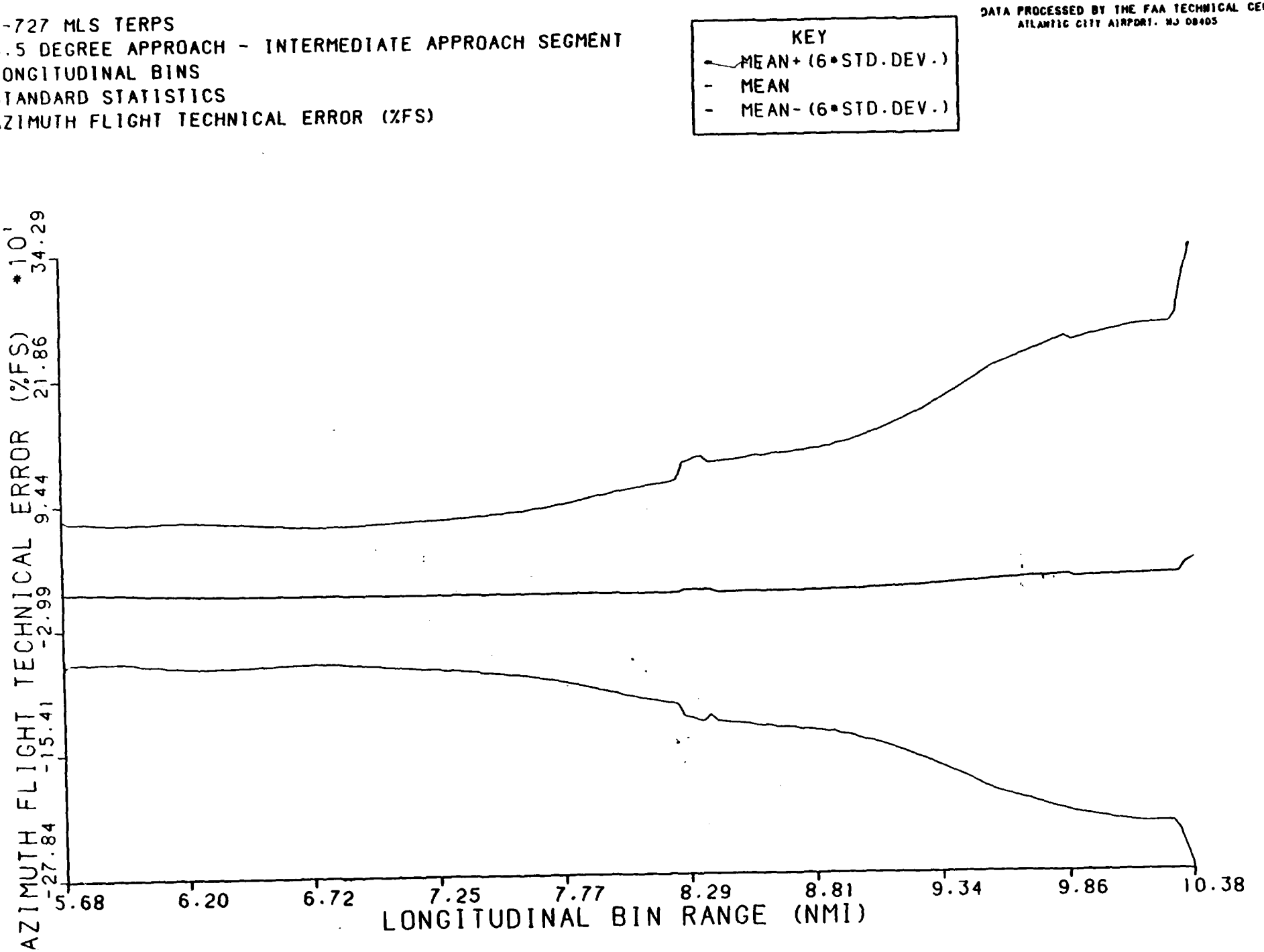
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6

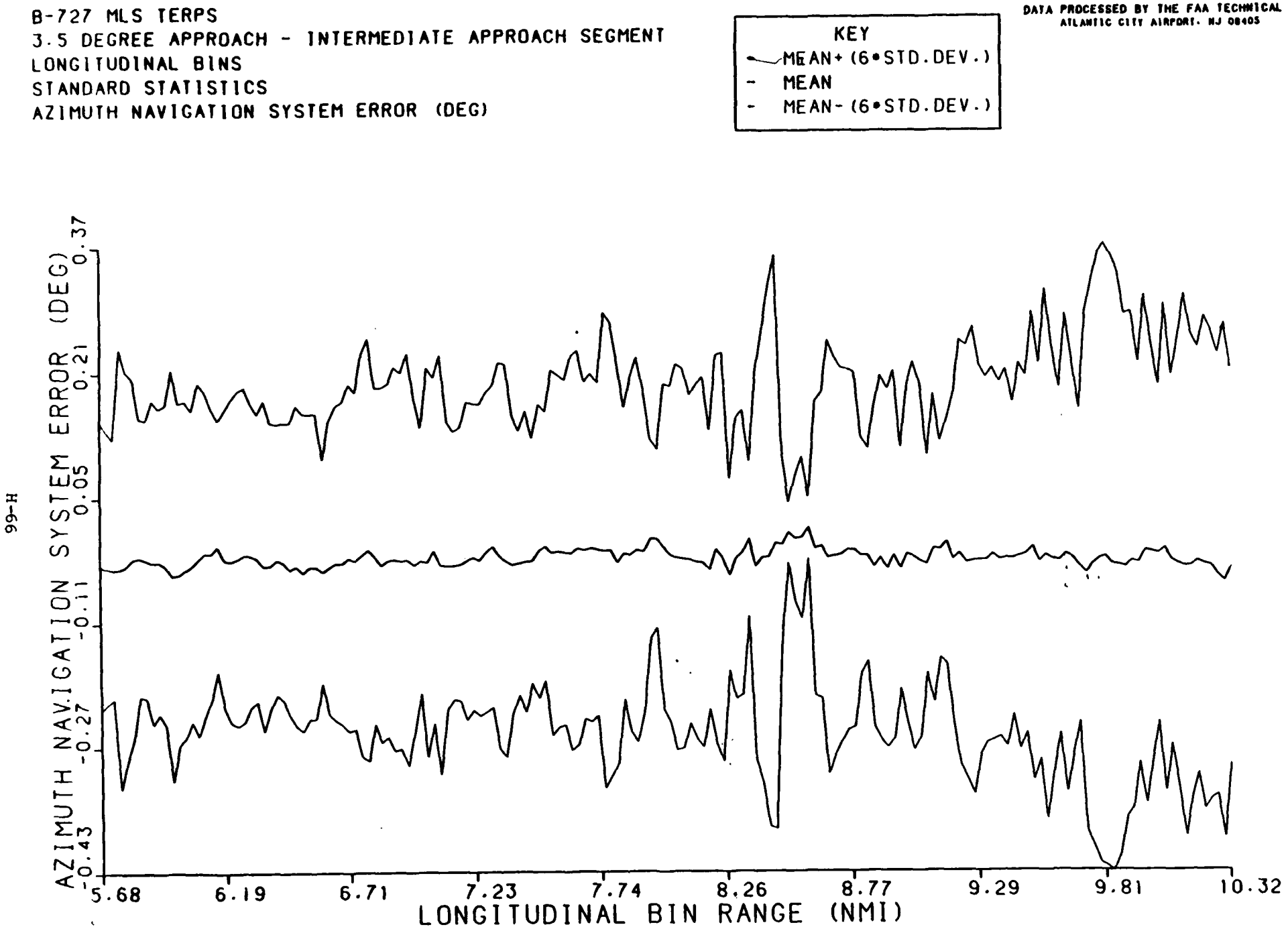
B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

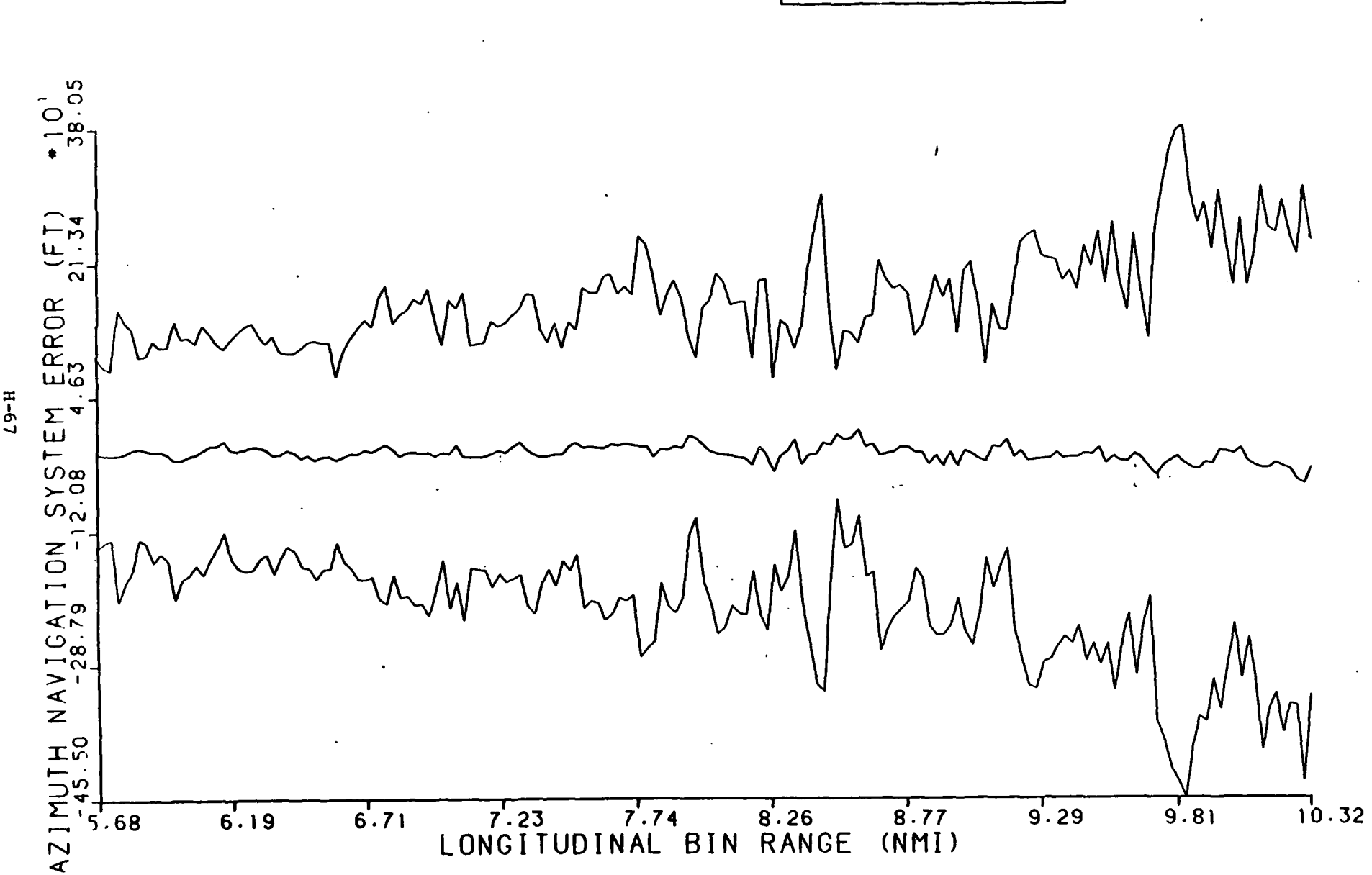
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



99-H

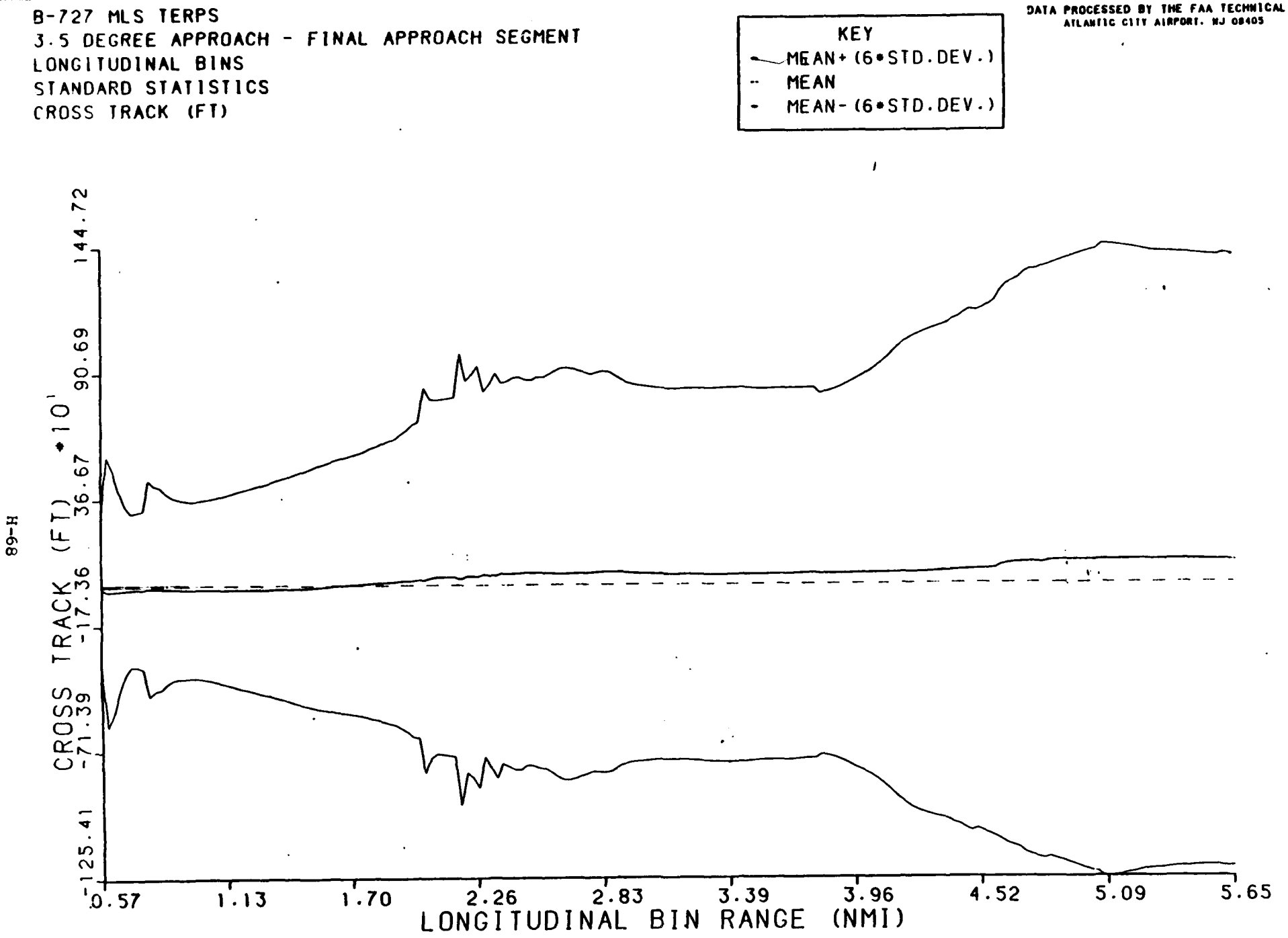
B-727 MLS TERPS
3.5 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



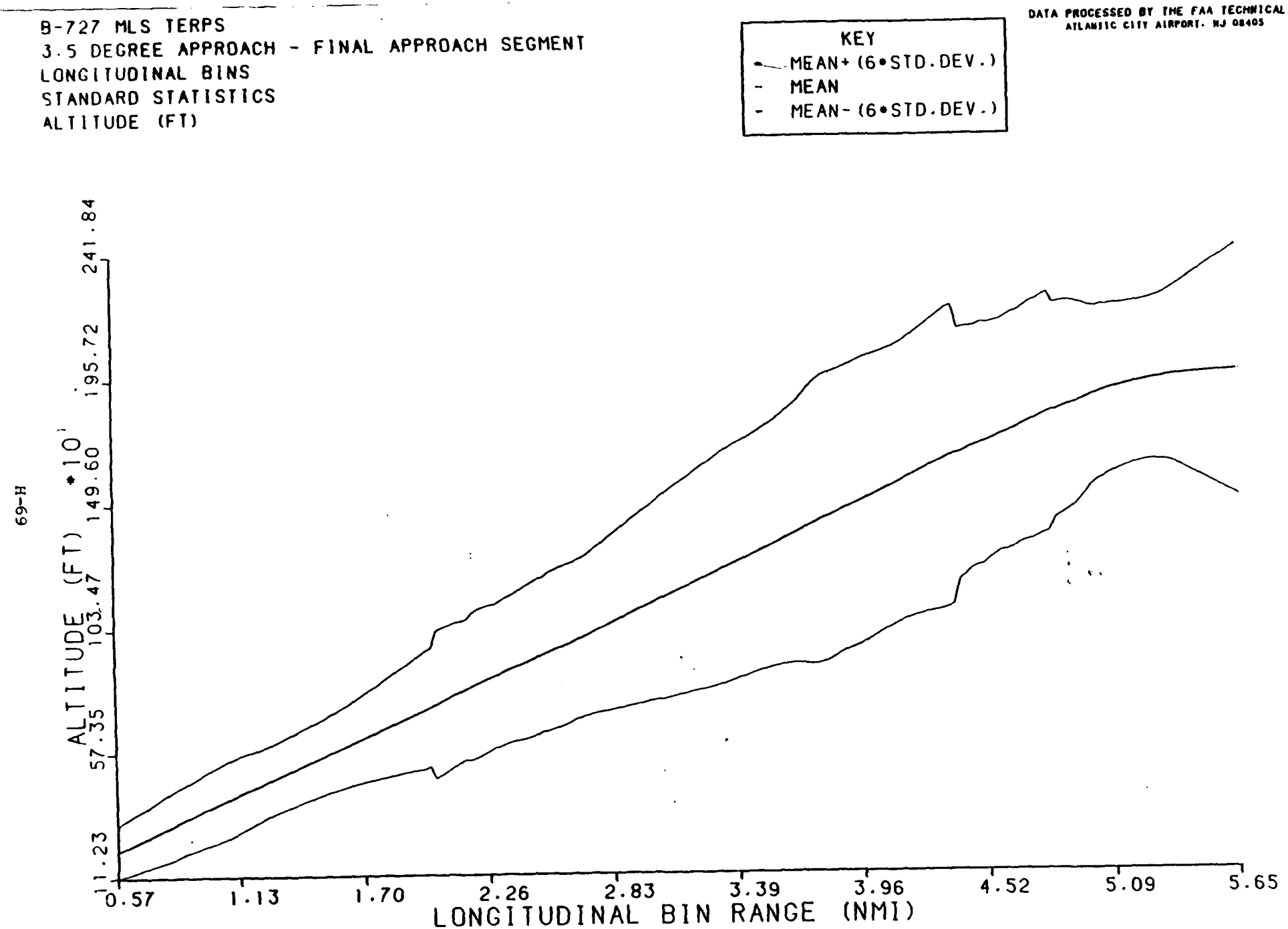
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

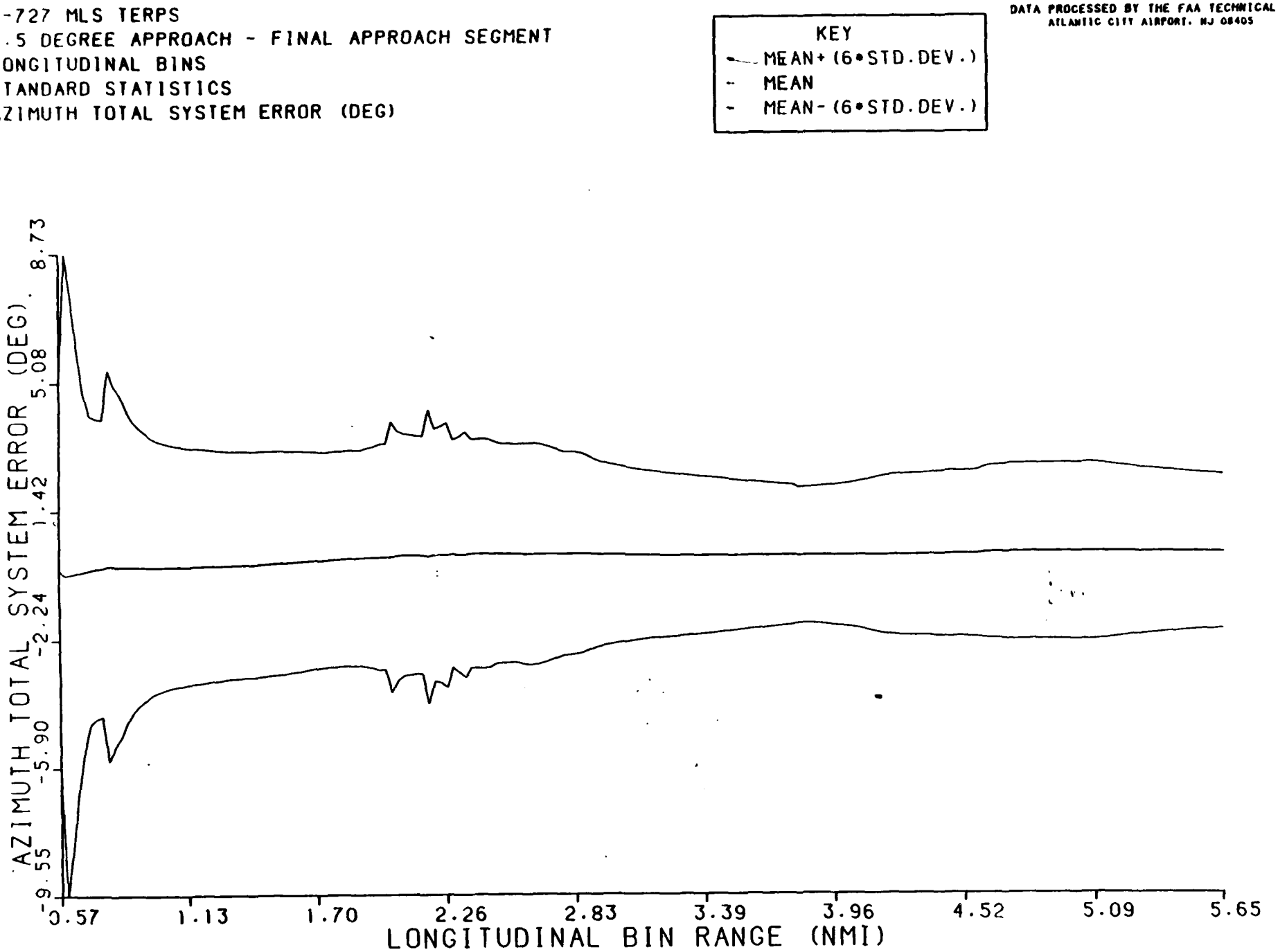
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



69-H

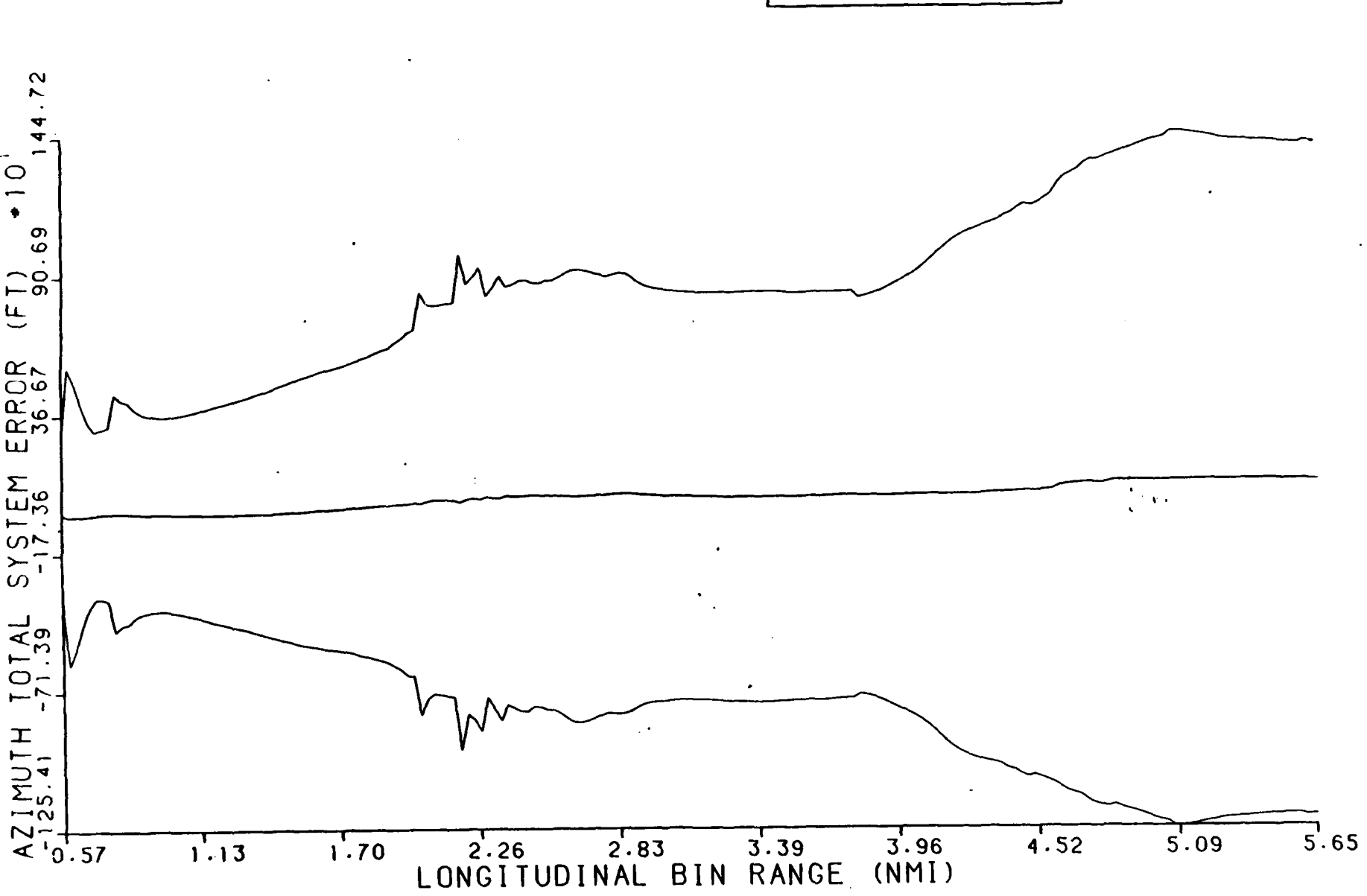
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



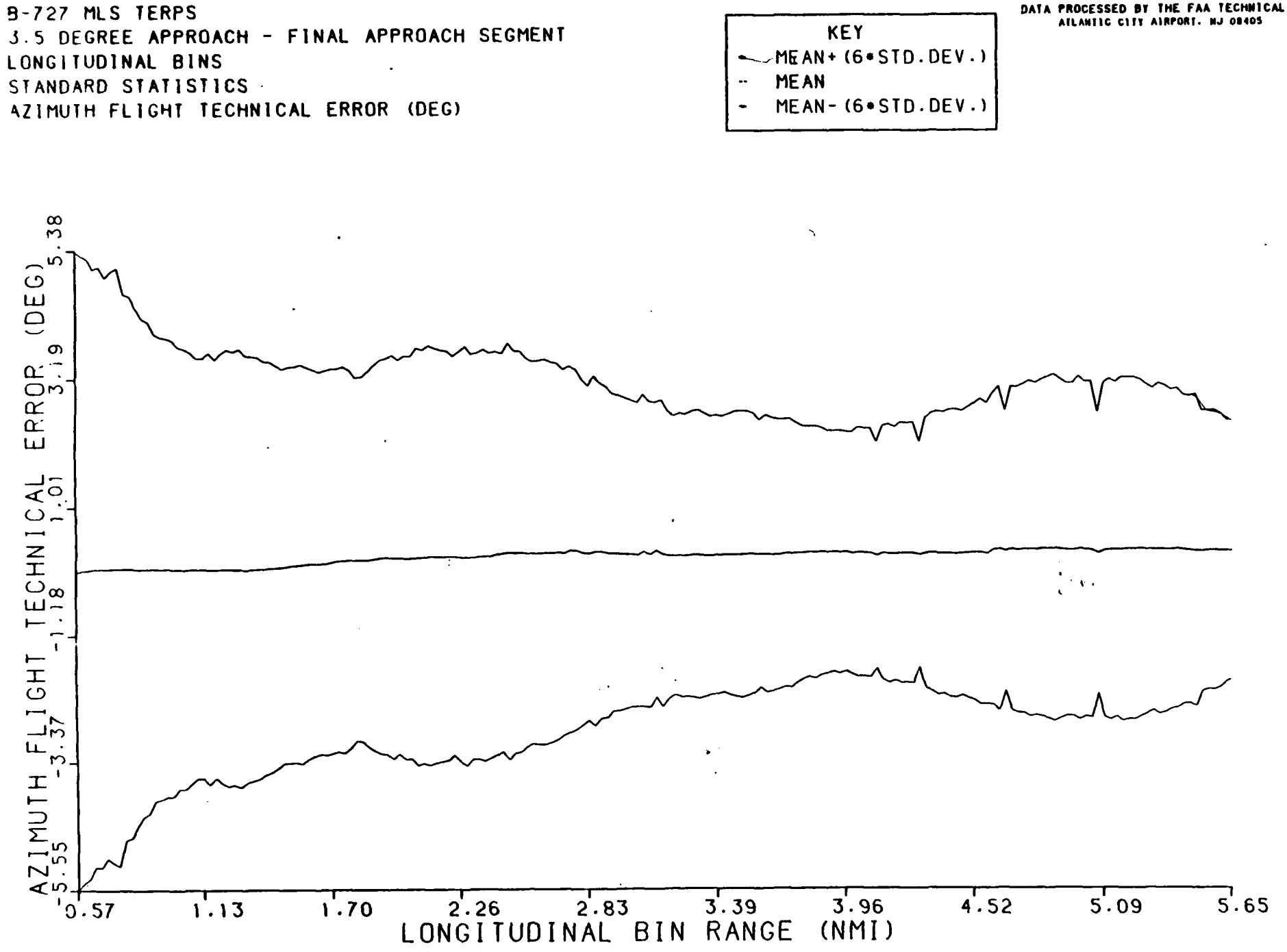
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



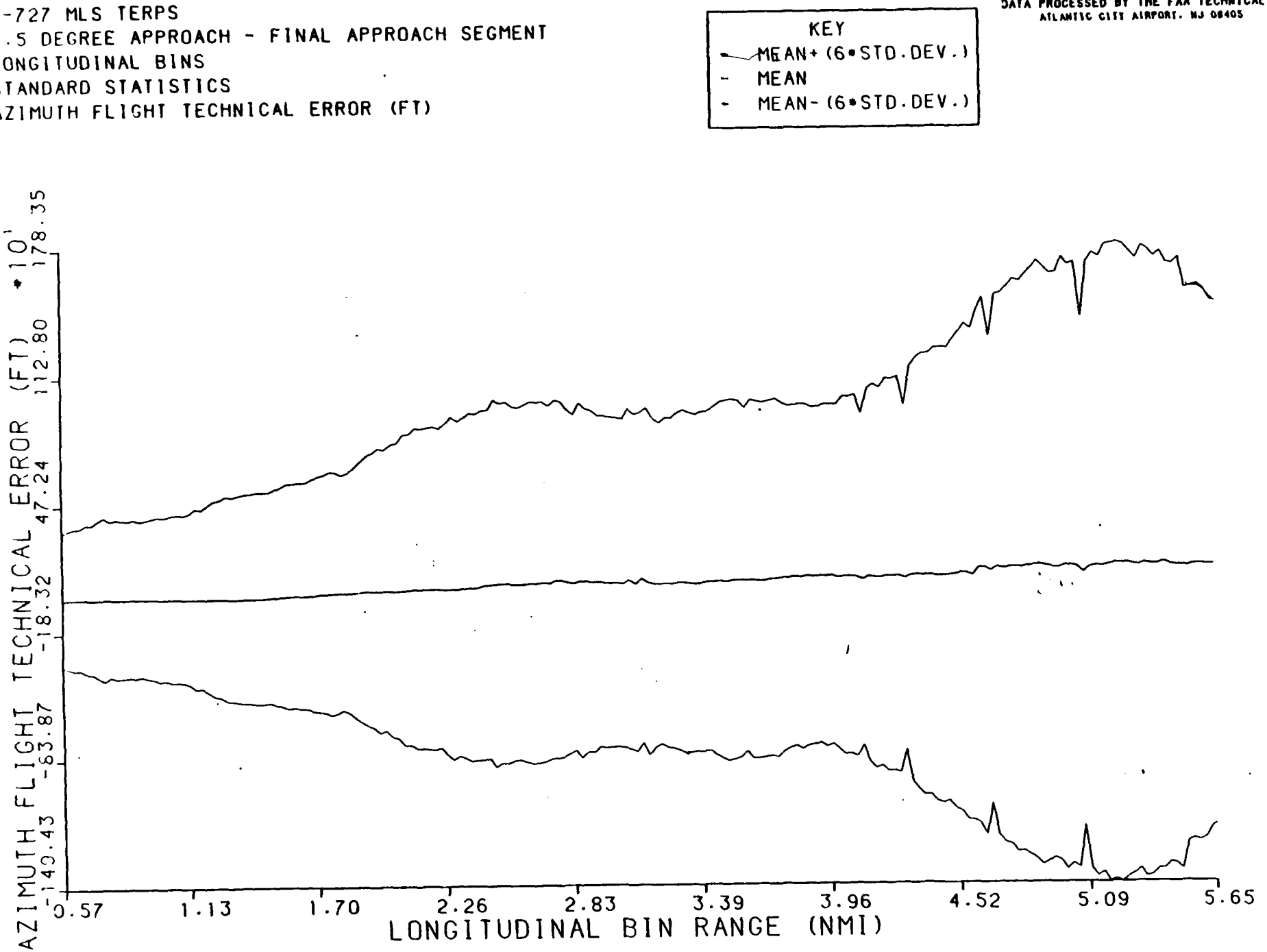
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



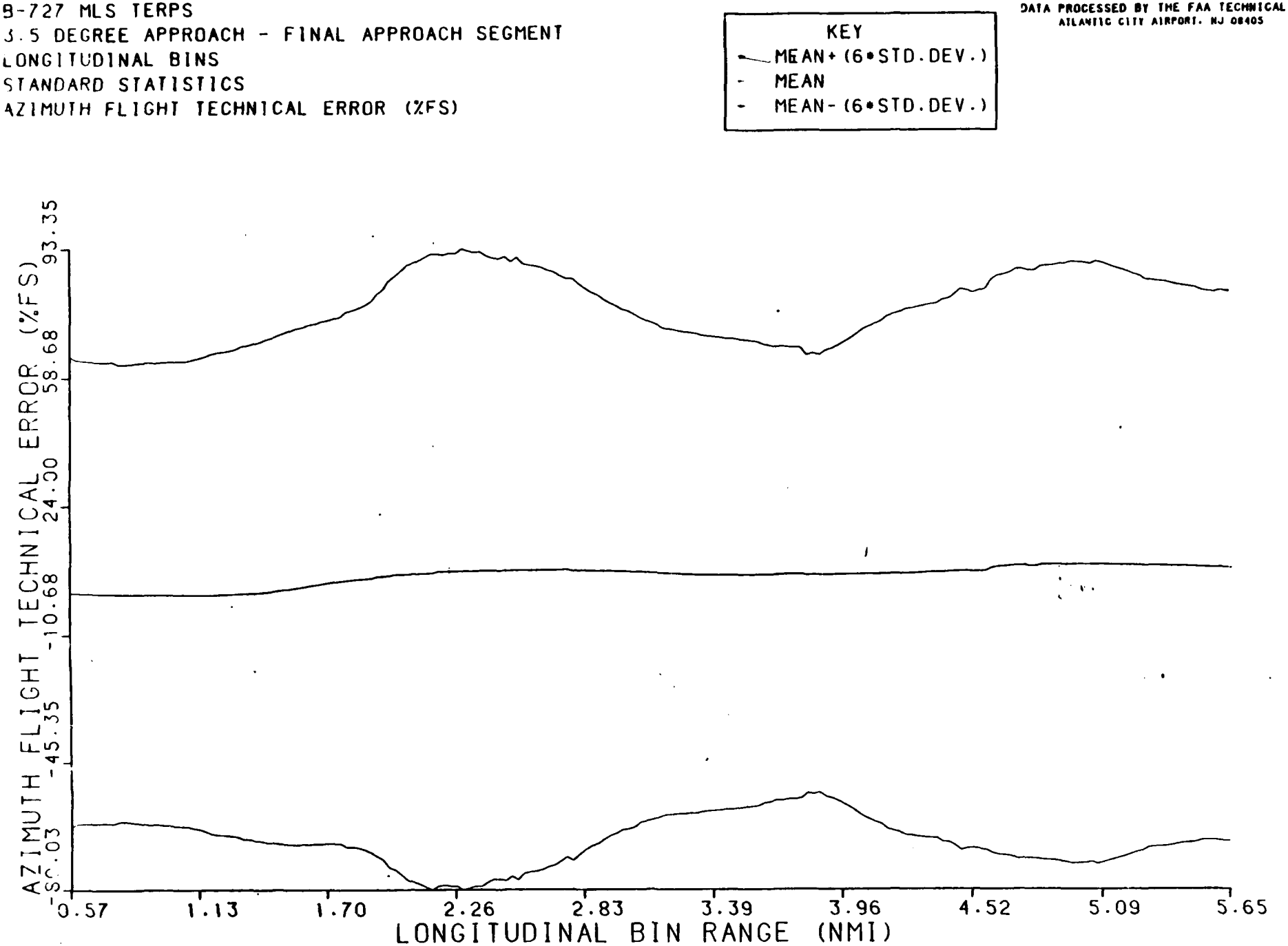
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



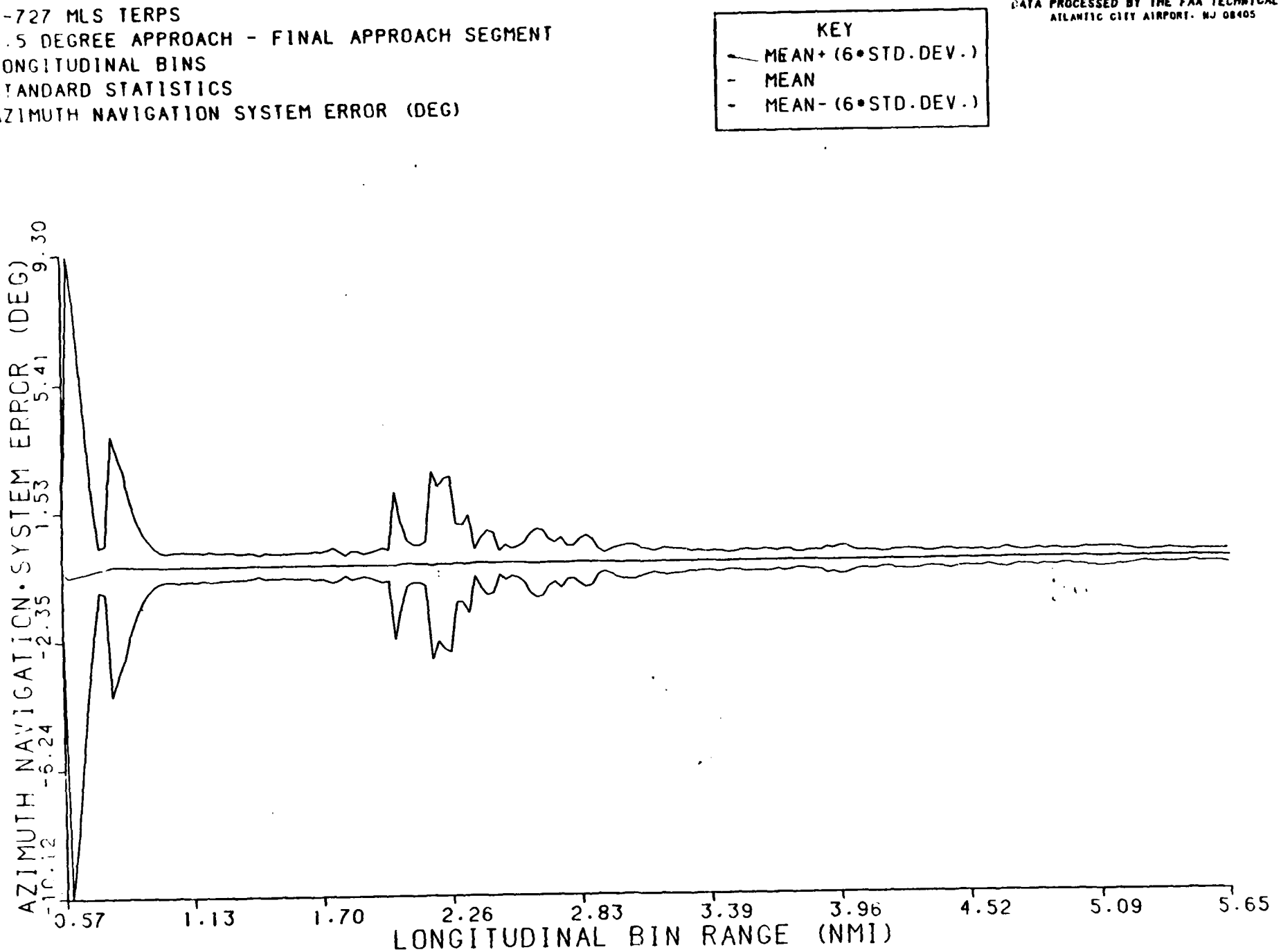
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



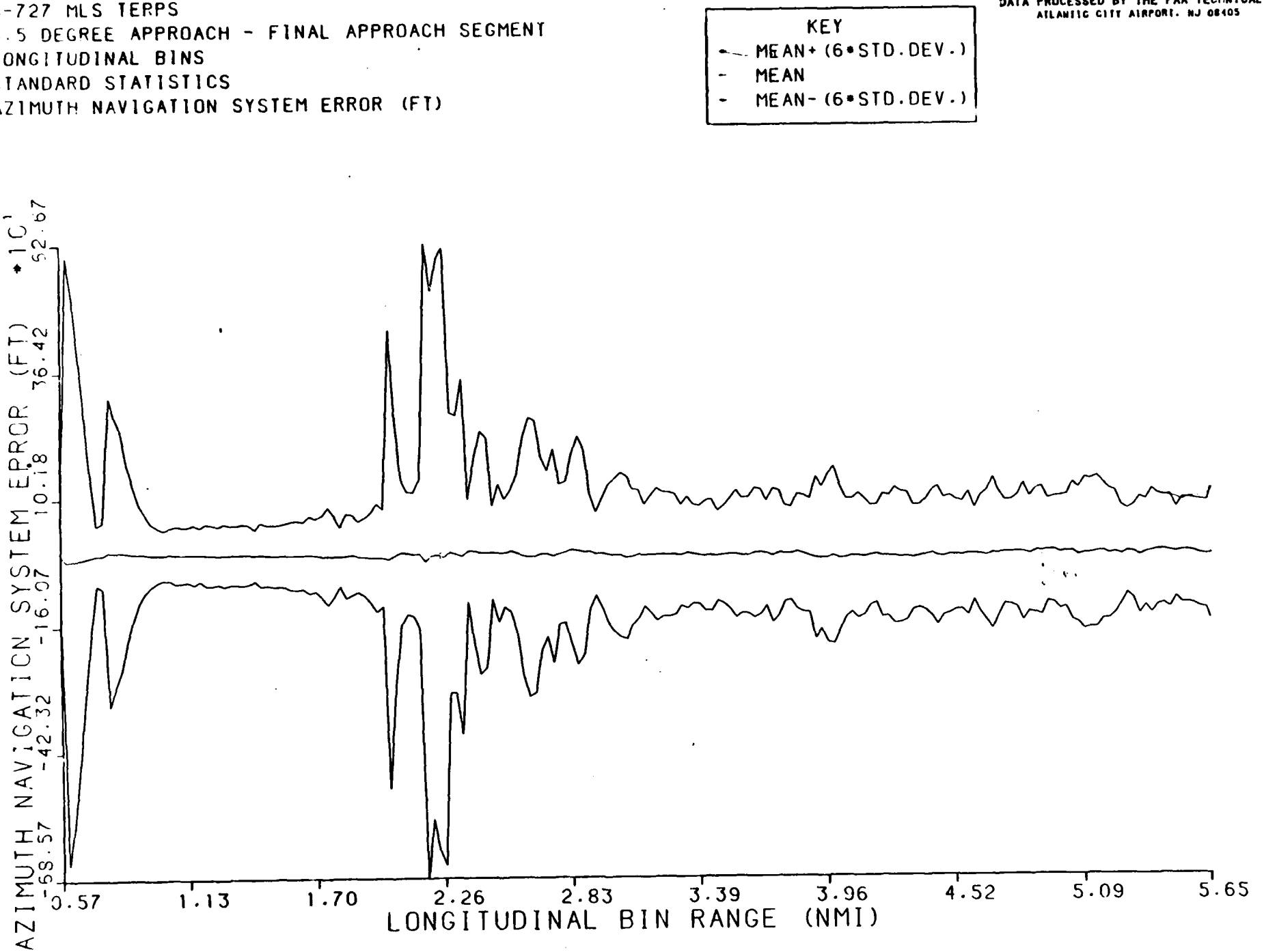
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



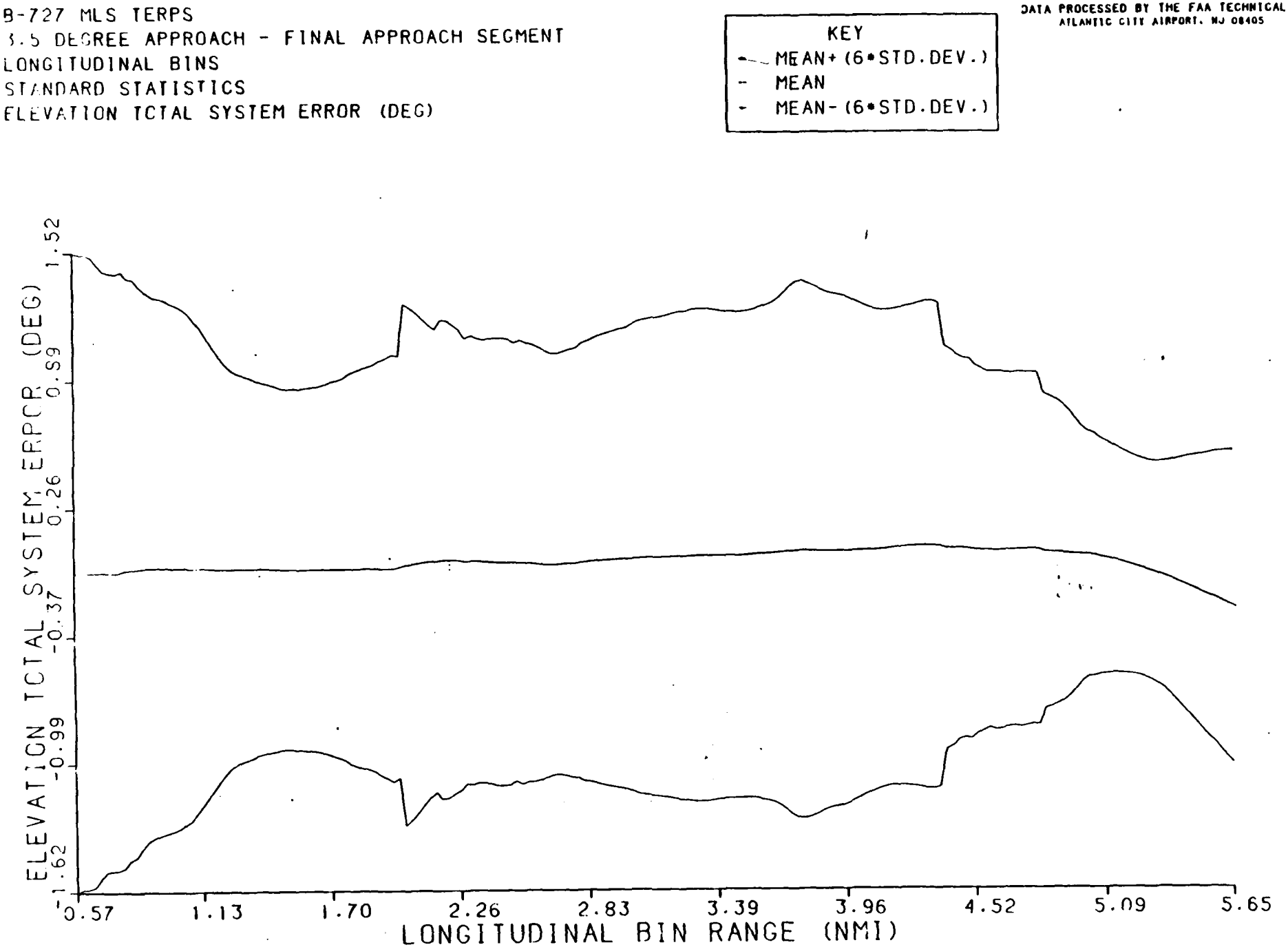
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



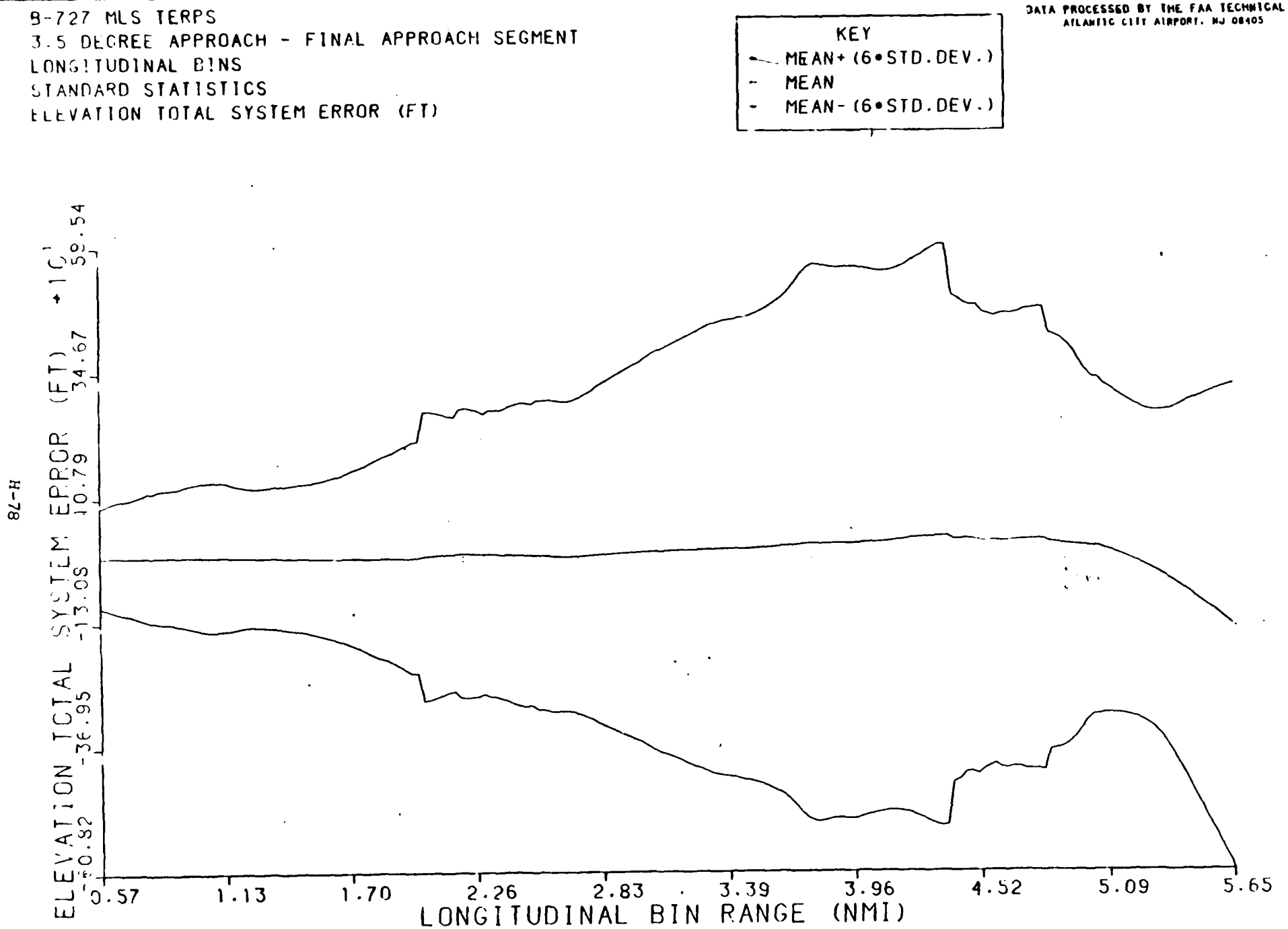
B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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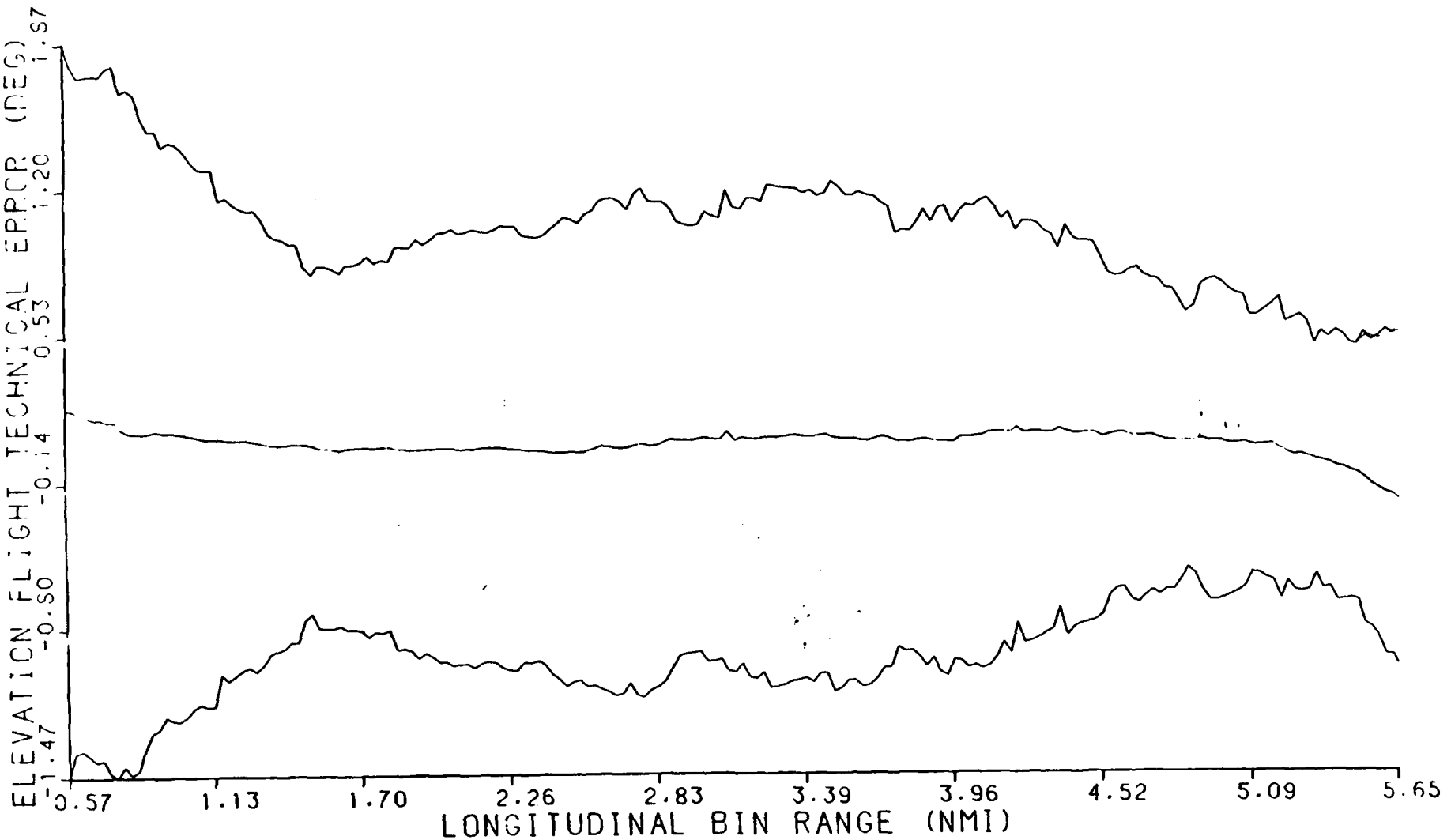
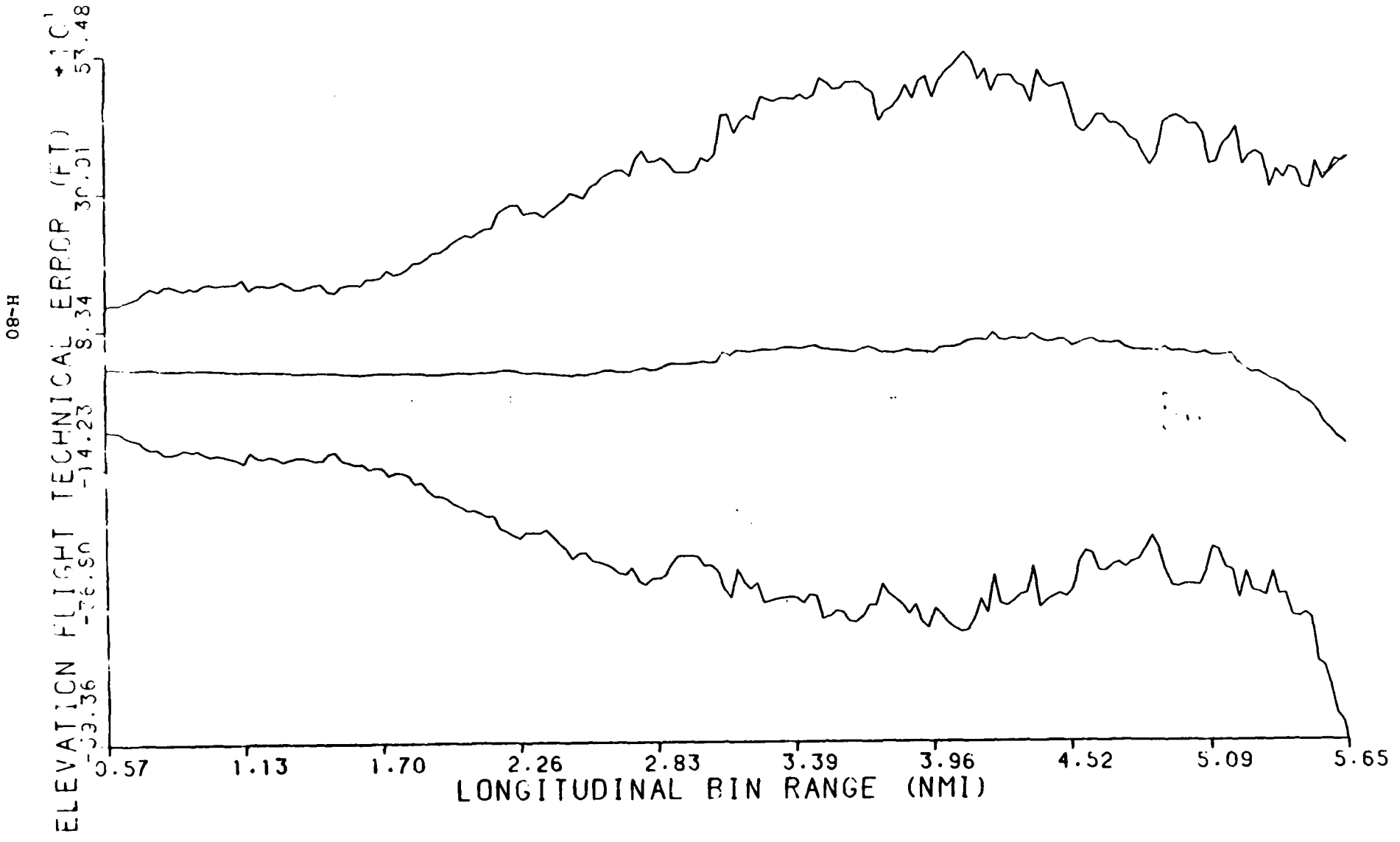
- MEAN
- MEAN- (6*STD.DEV.)



B-727 MLS TERPS
3.0 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



08-H

B-727 MLS TERPS
3.0 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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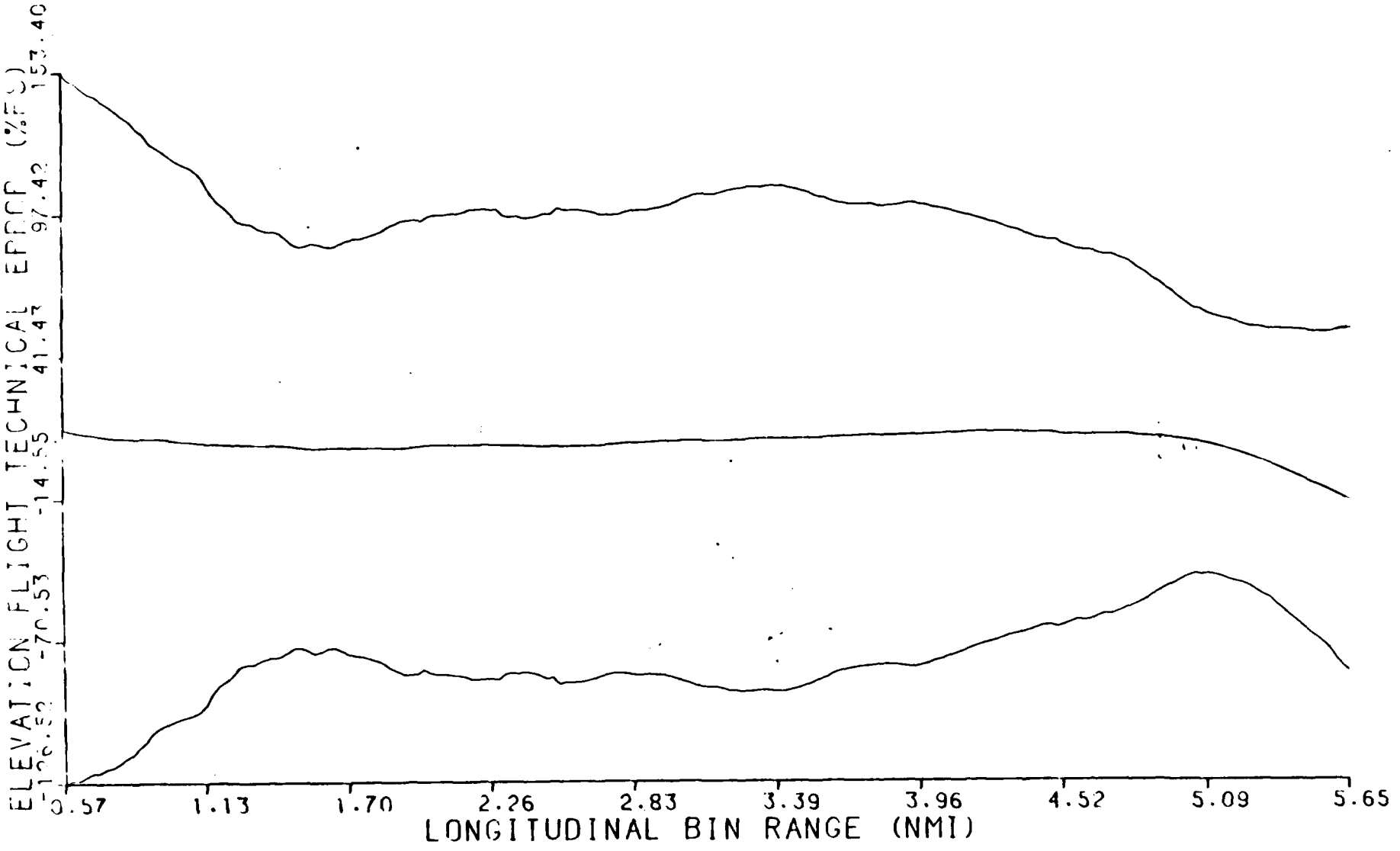
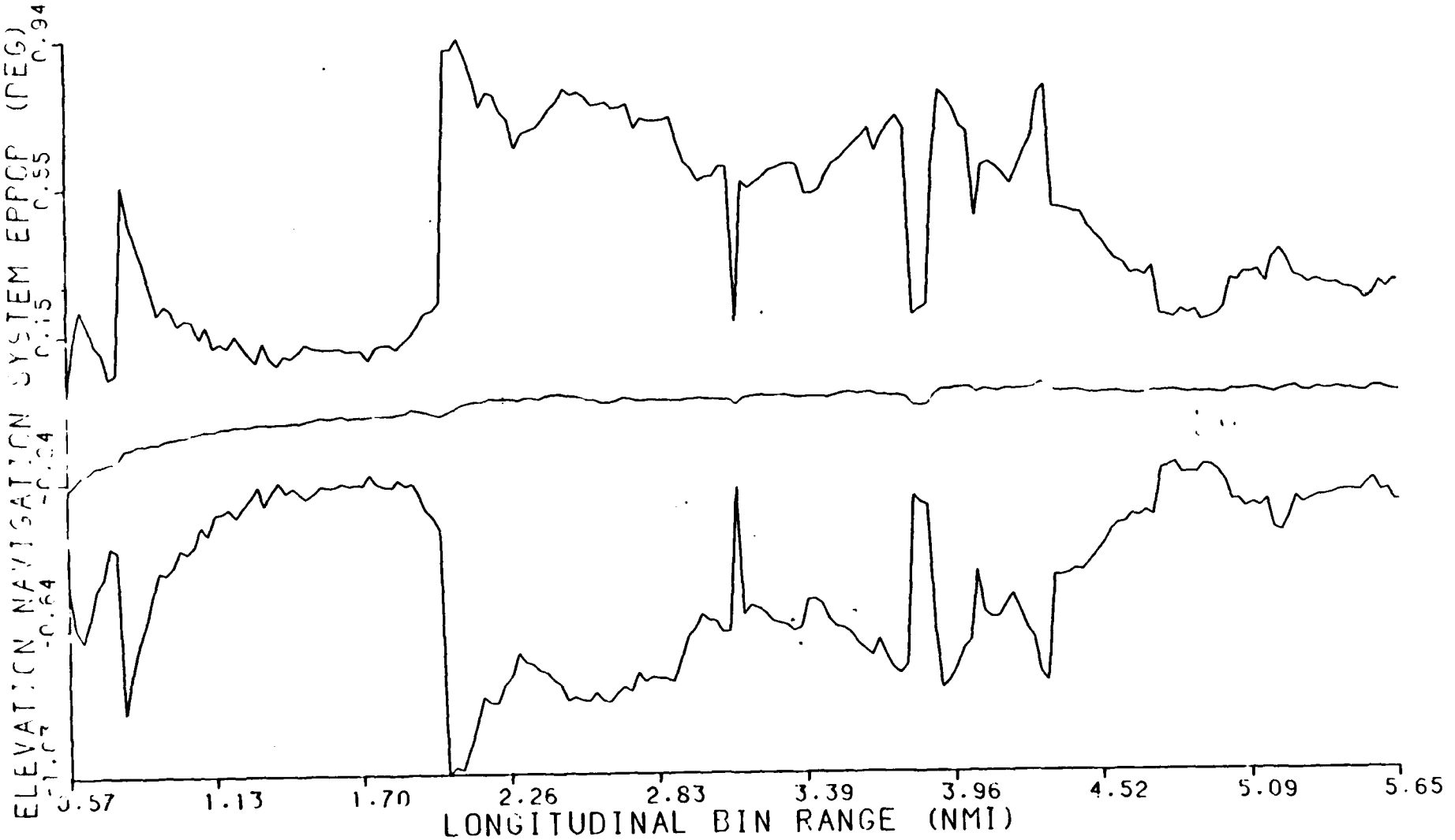
- MEAN
- MEAN-(6*STD.DEV.)



B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (DEG)

KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

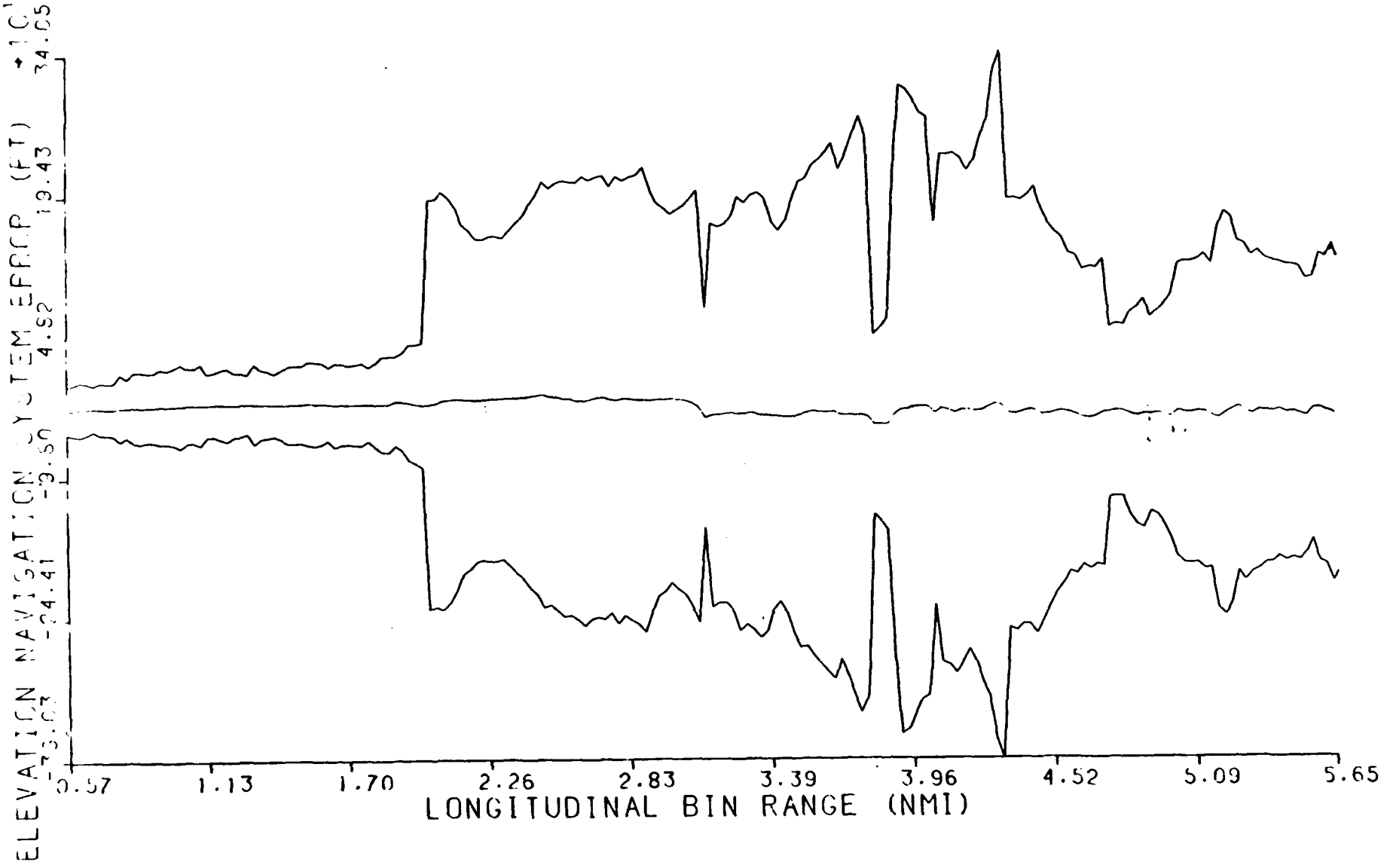
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (FT)

KEY
- MEAN+ (6*STD.DEV.)
- MEAN
- MEAN- (6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.5 DEGREE APPROACH - MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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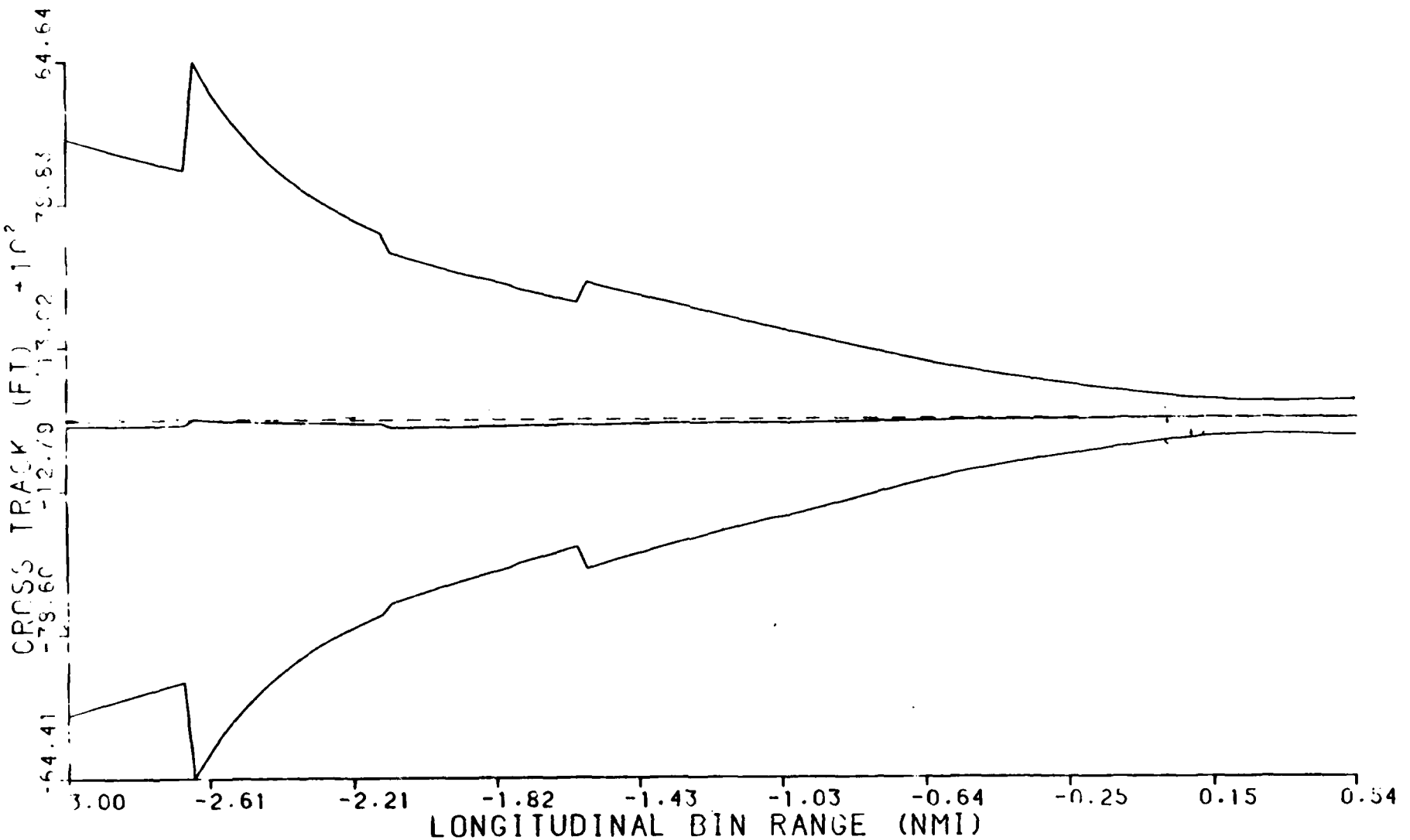
MEAN
MEAN- (6*STD.DEV.)



B-727 MLS TERPS
3.0 DEGREE APPROACH - MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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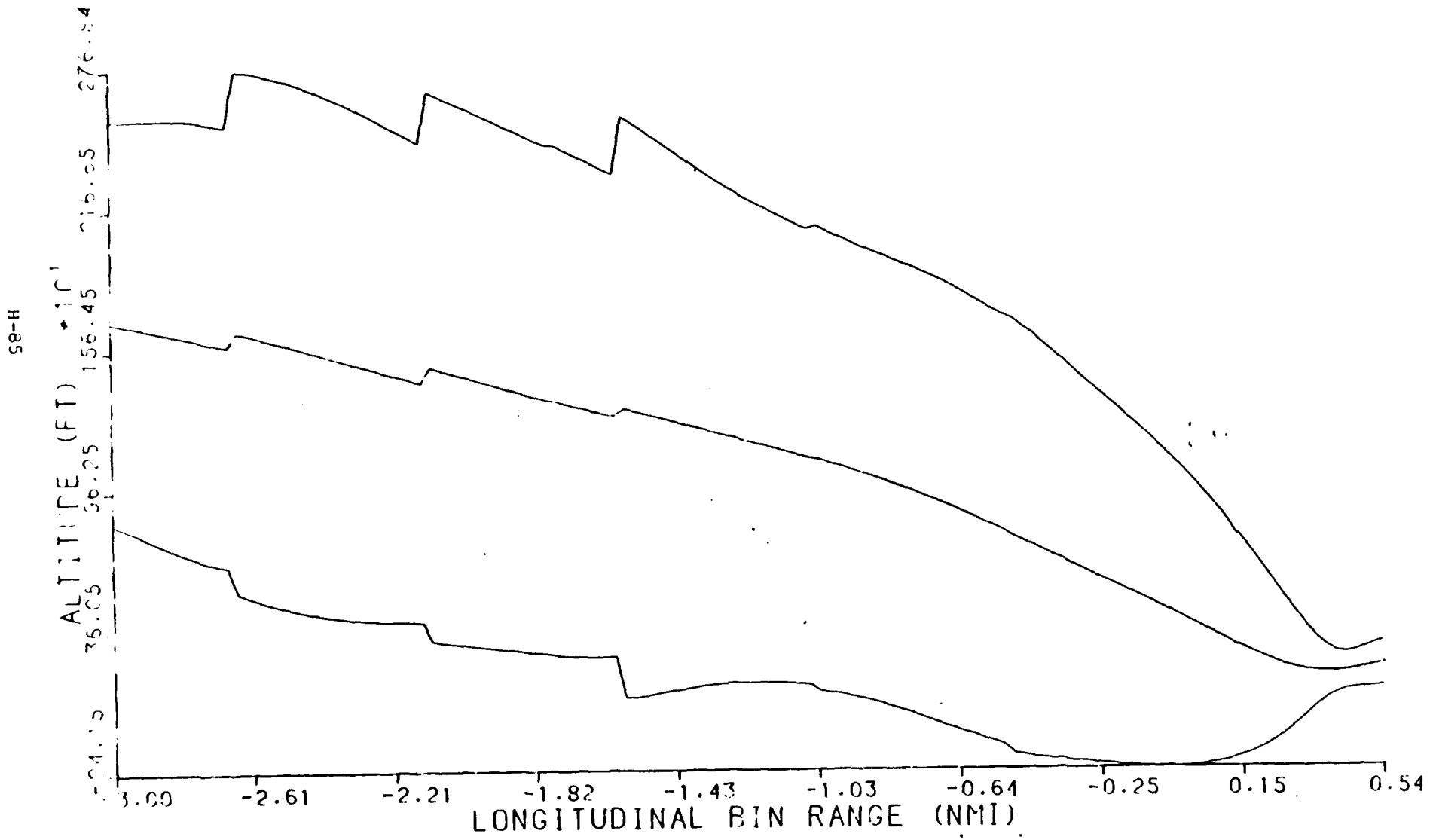

58-H

B-727 MLS TERPS
3.5 DEGREE APPROACH - MISSED APPROACH SEGMENT
VERTICAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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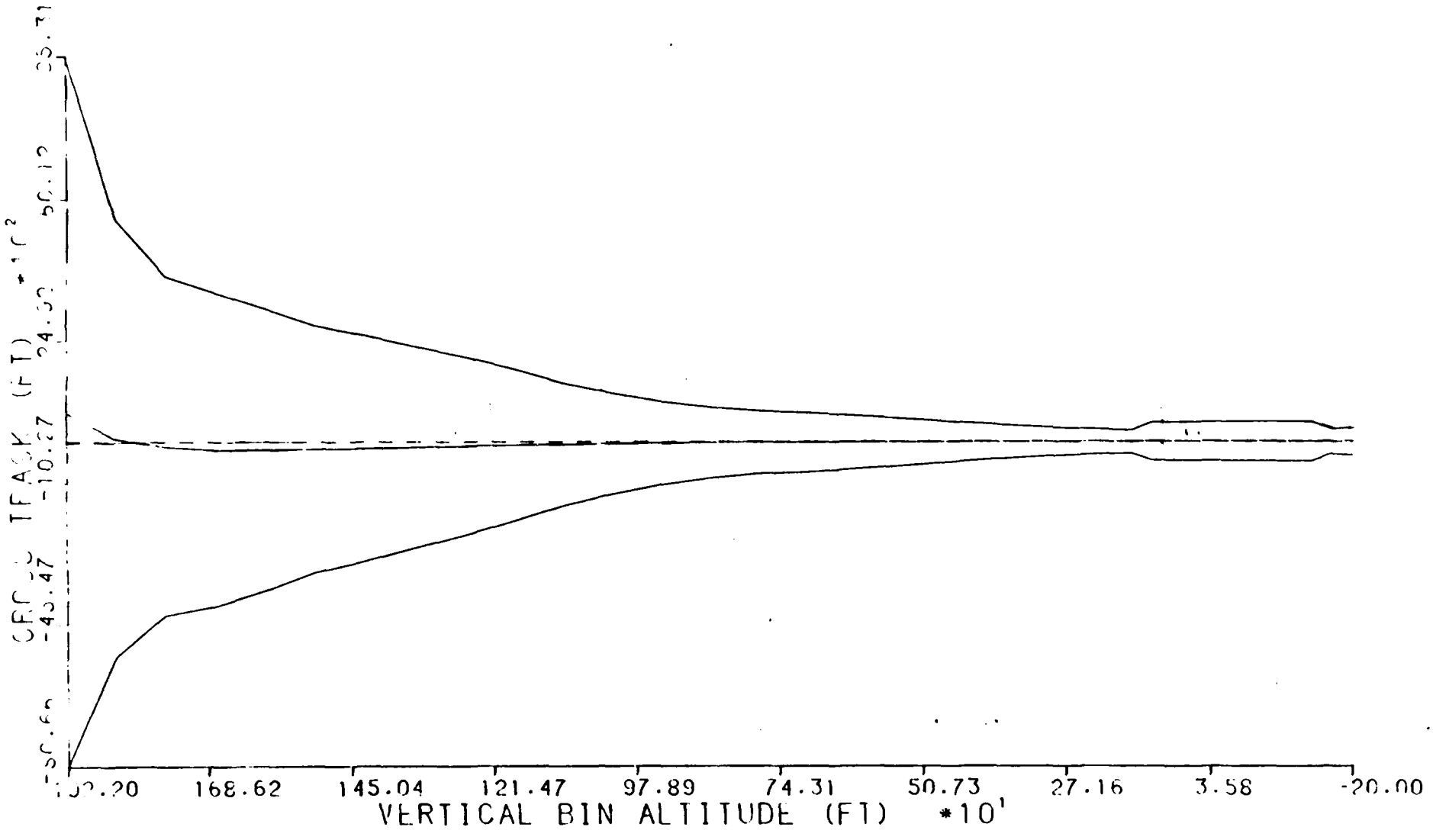
- MEAN
- MEAN-(6*STD.DEV.)



98-H

B-727 MLS TERPS
3.5 DEGREE APPROACH - MISSED APPROACH SEGMENT
VERTICAL BINS
STANDARD STATISTICS
ALONG TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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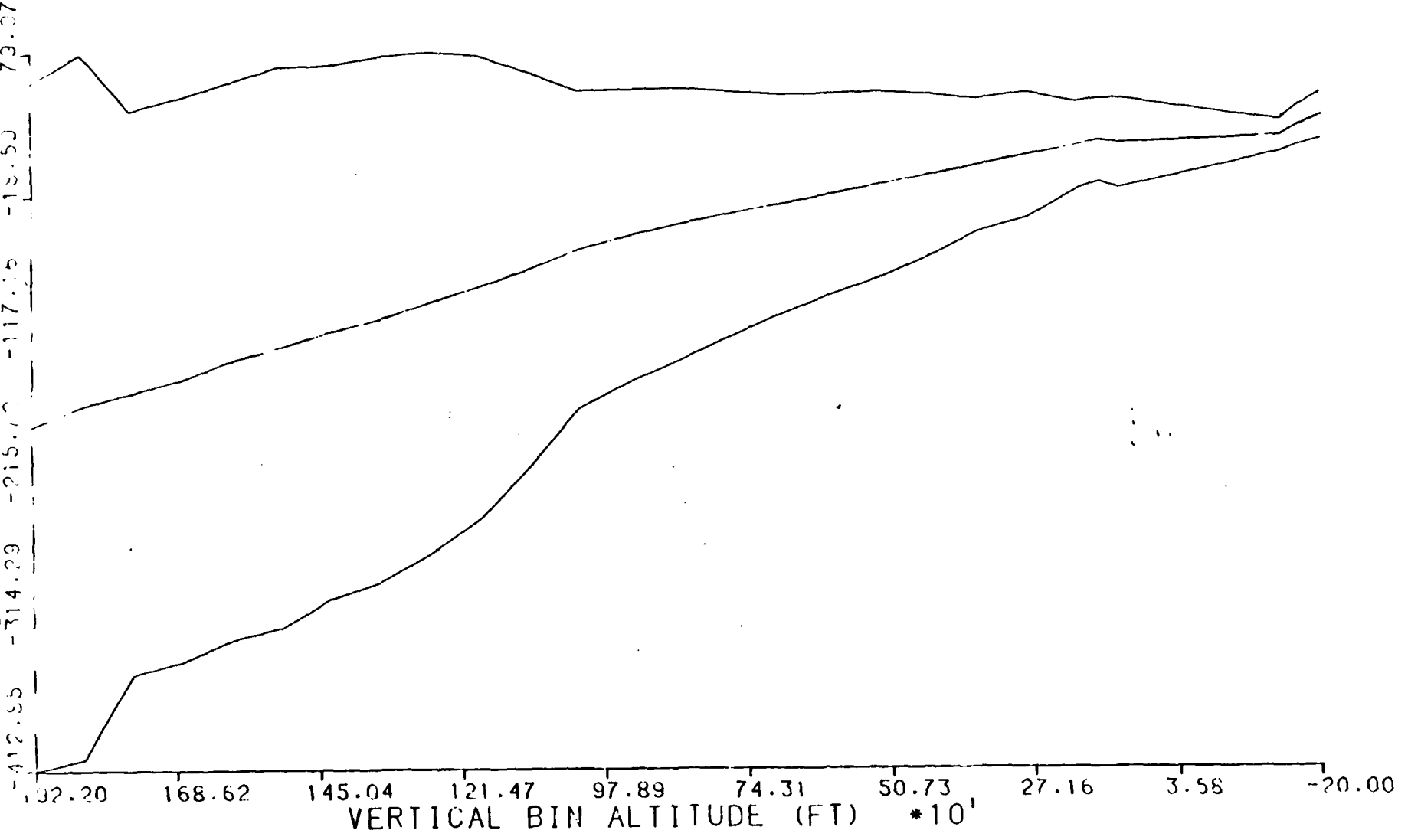
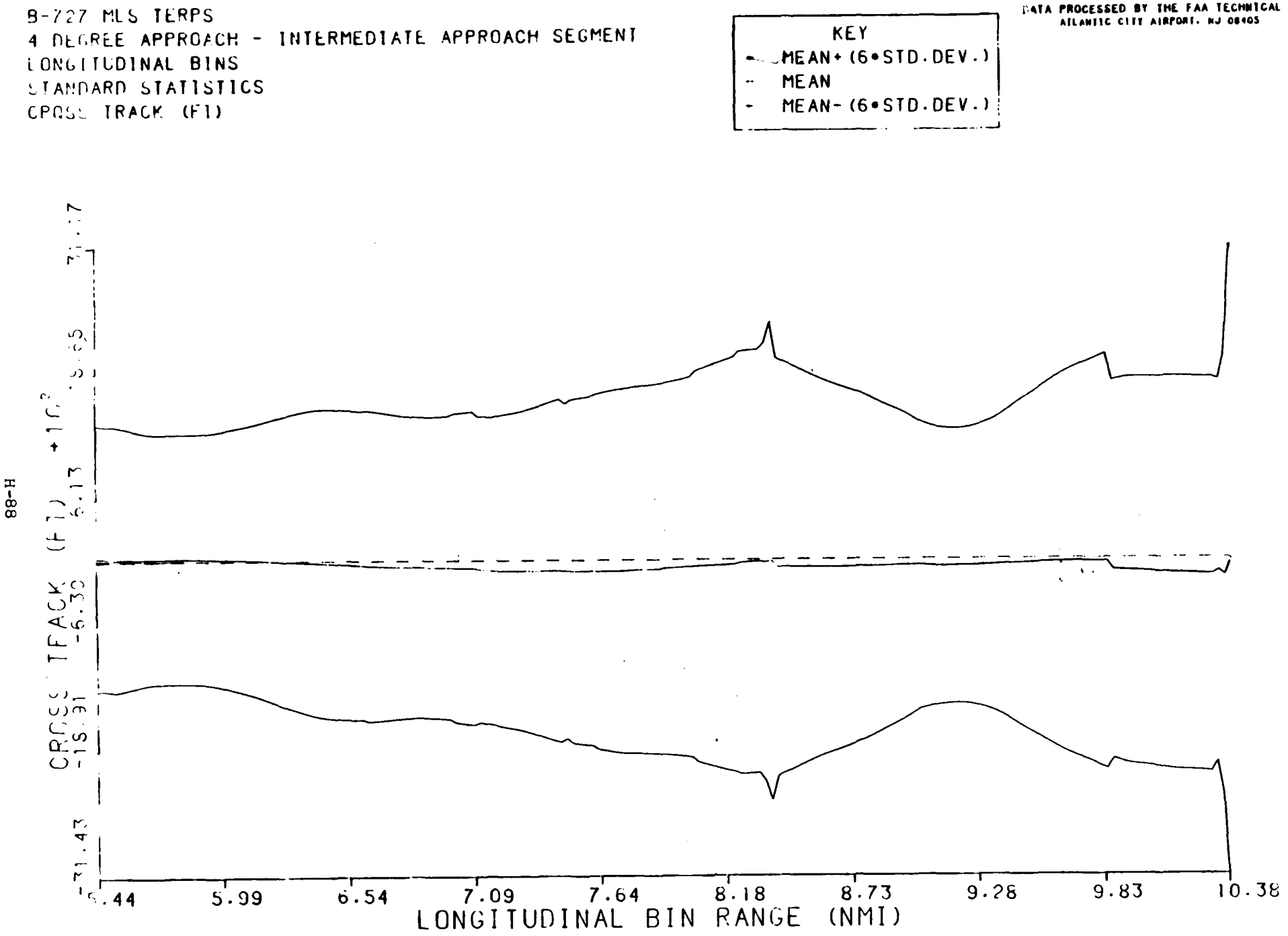
- MEAN
- MEAN-(6*STD.DEV.)



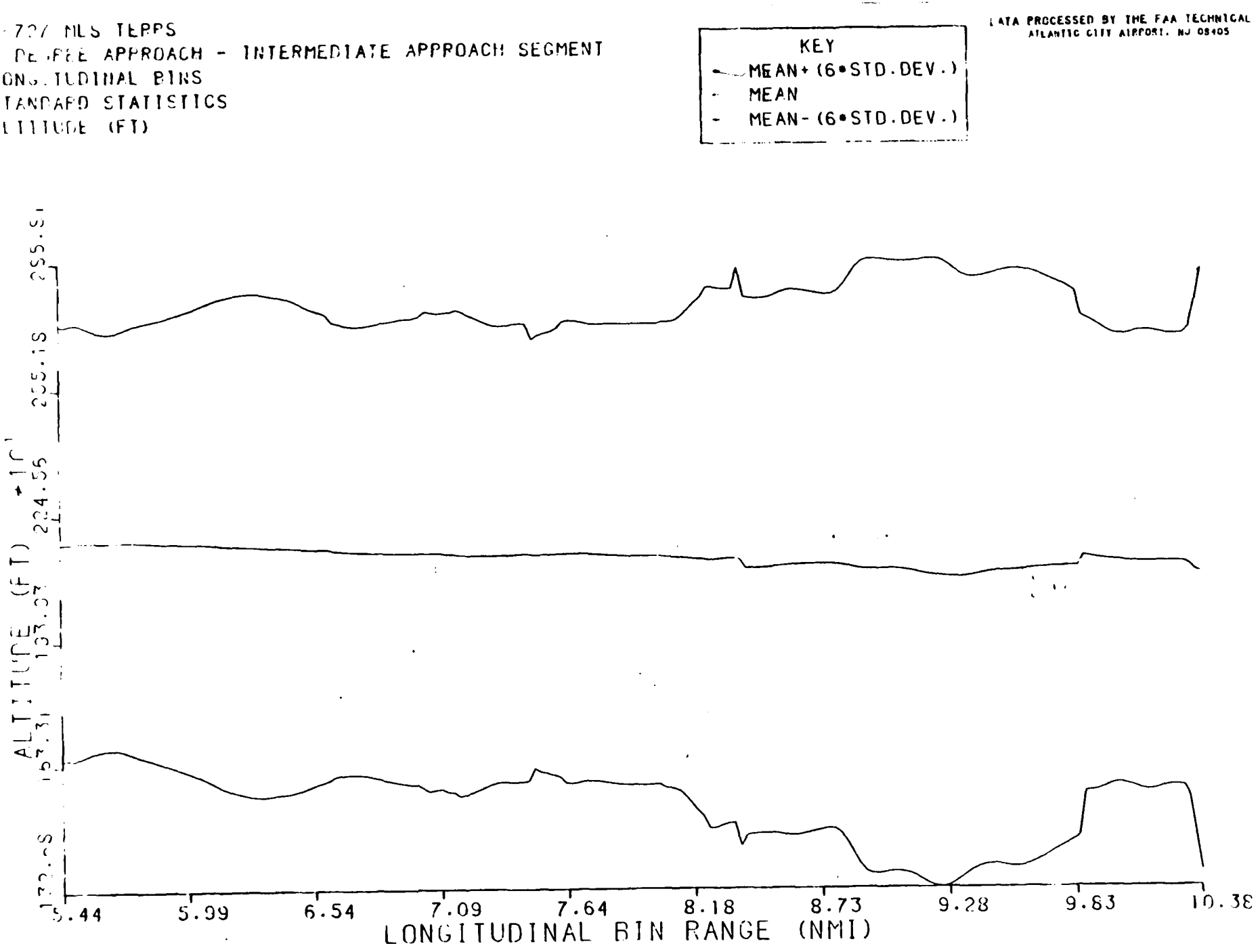
B-727 MLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 NLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

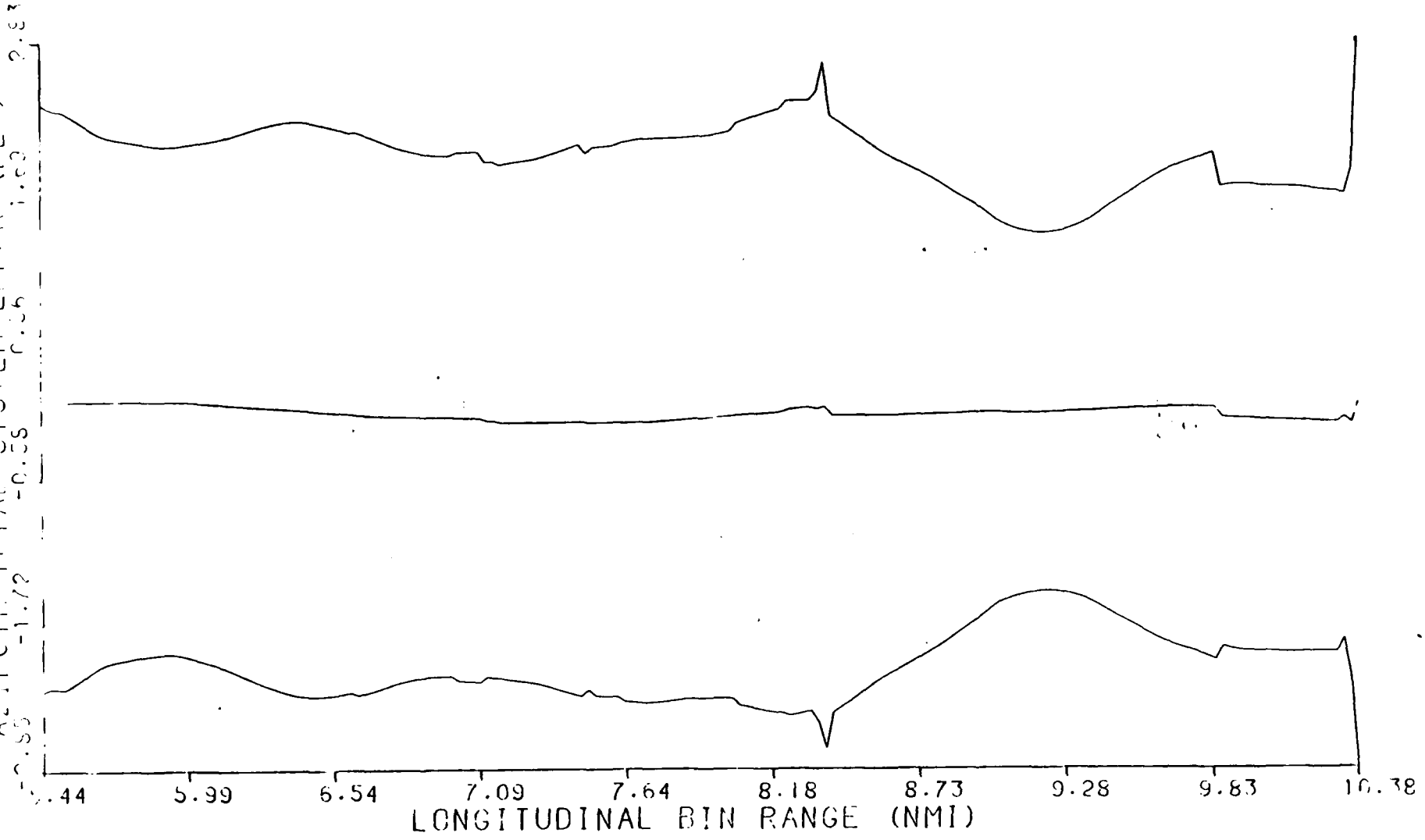
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

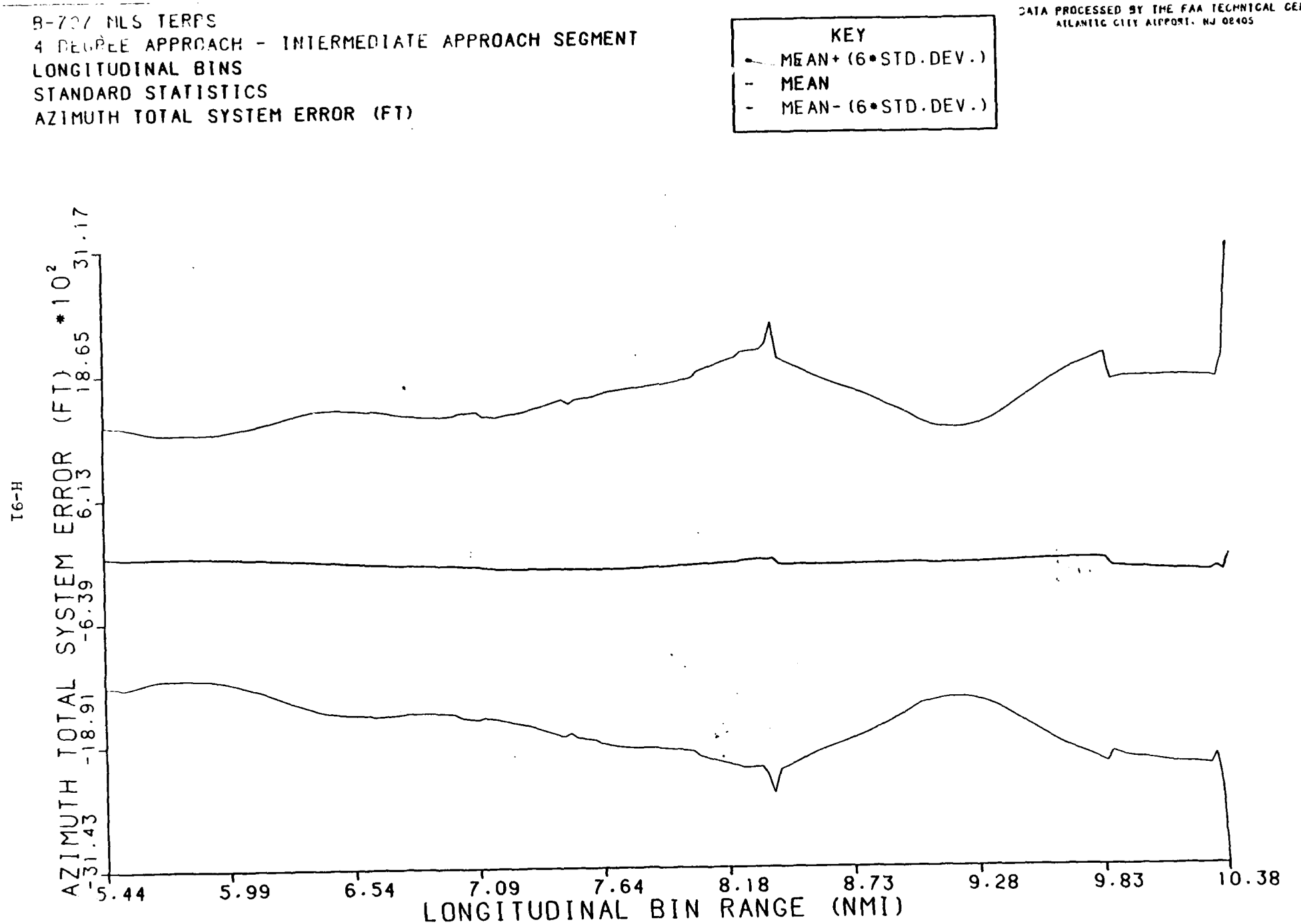
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



06-H

B-727 NLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

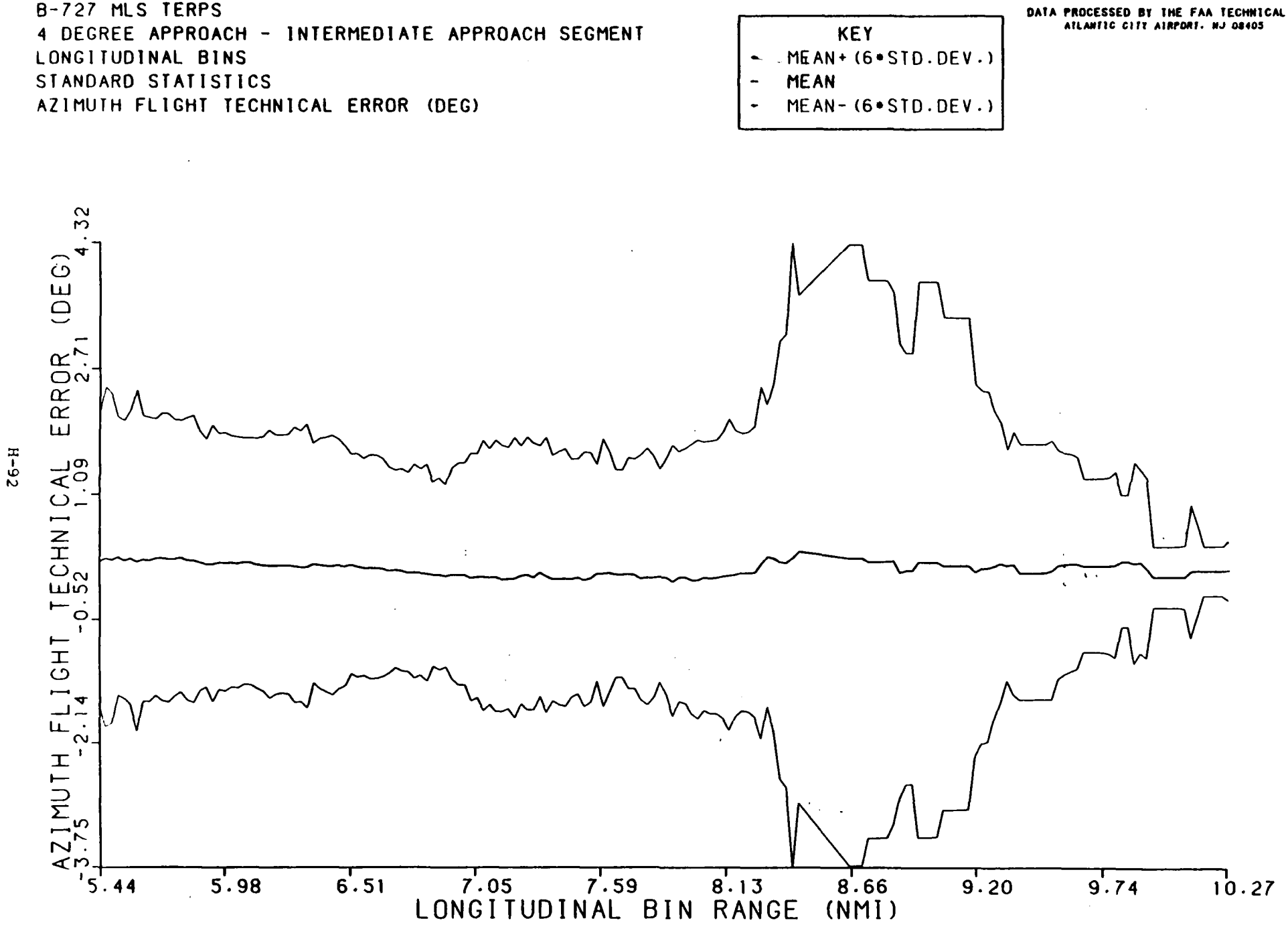
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



T6-H

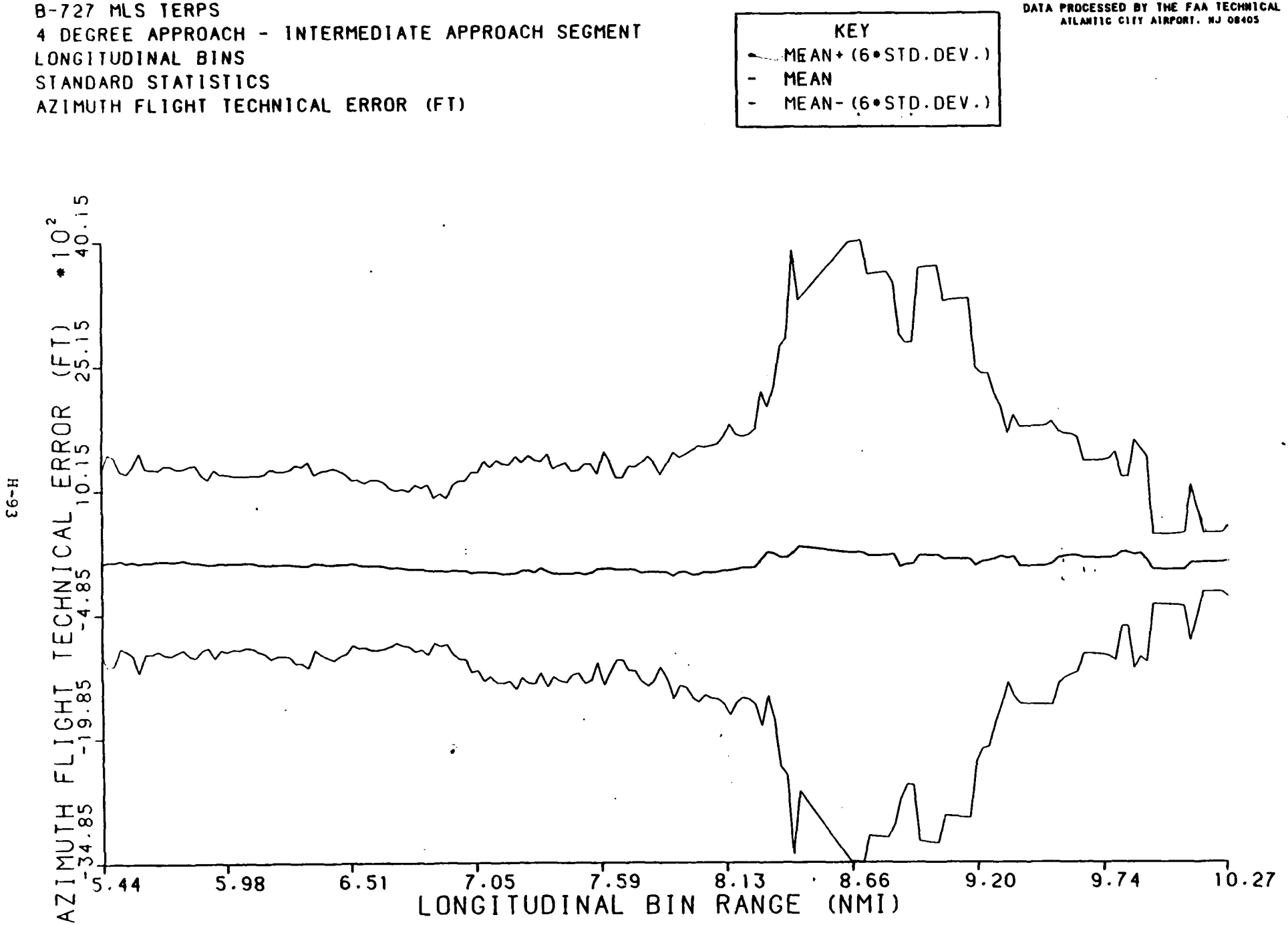
B-727 MLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



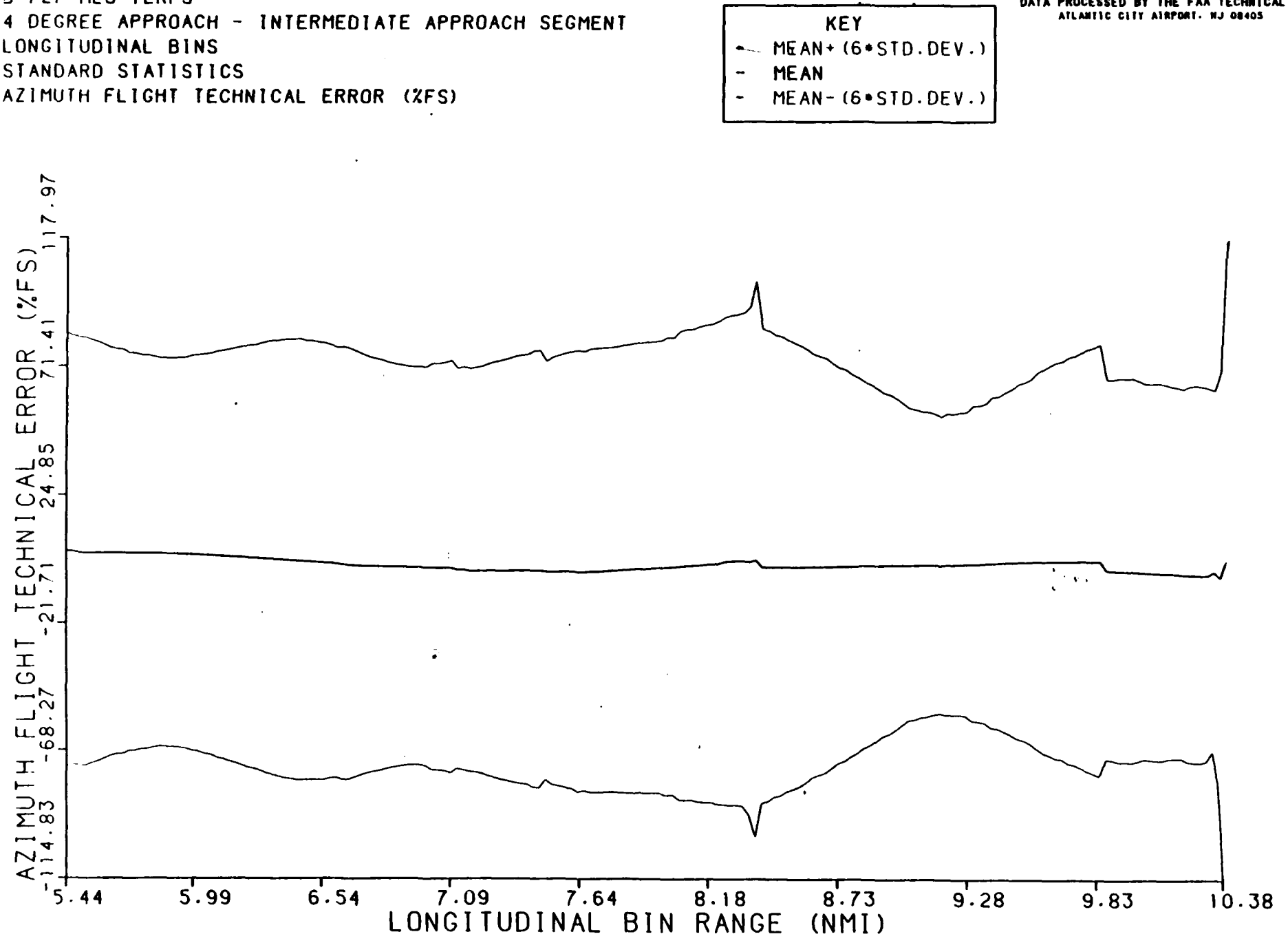
B-727 MLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



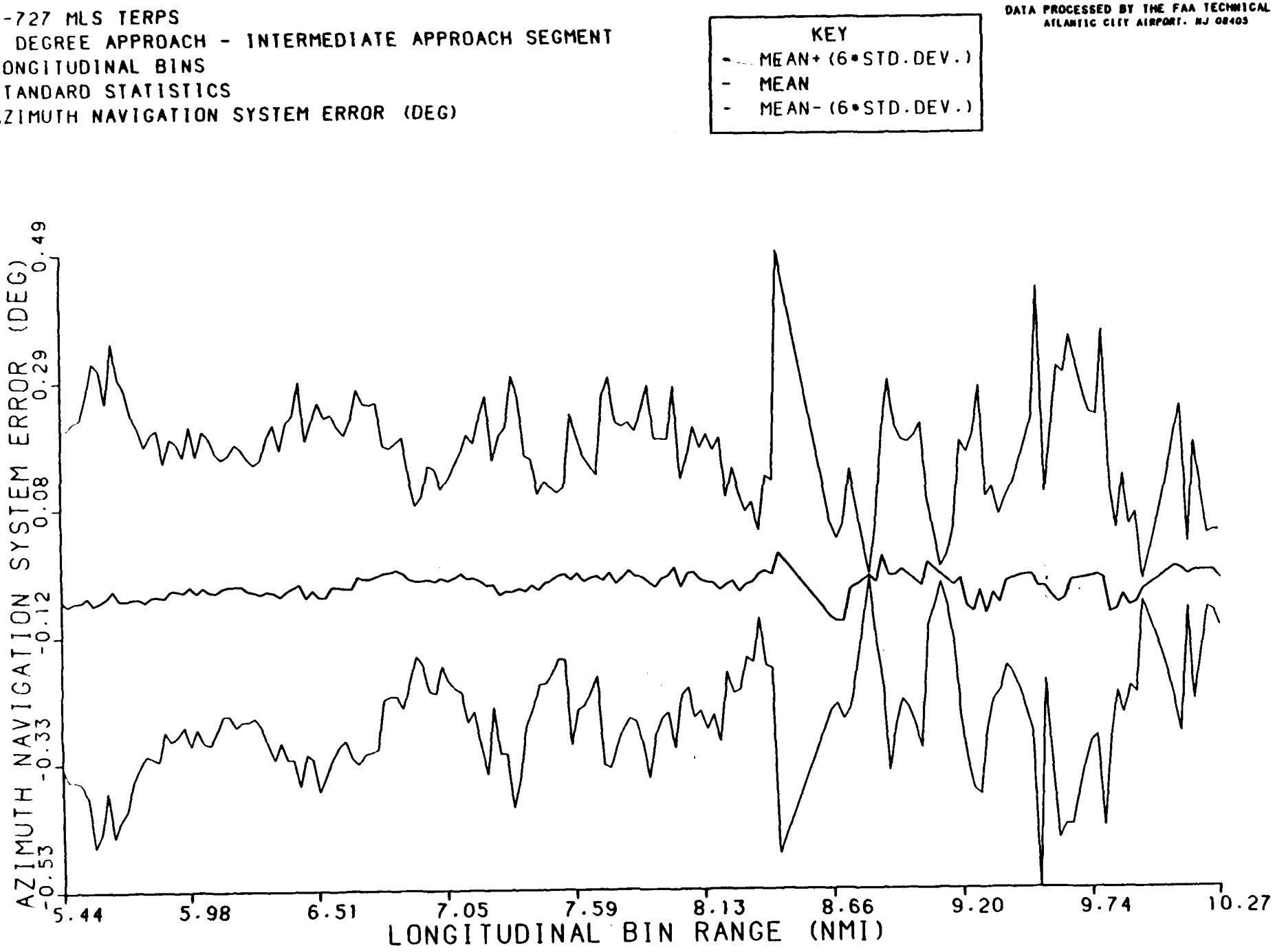
B-727 MLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



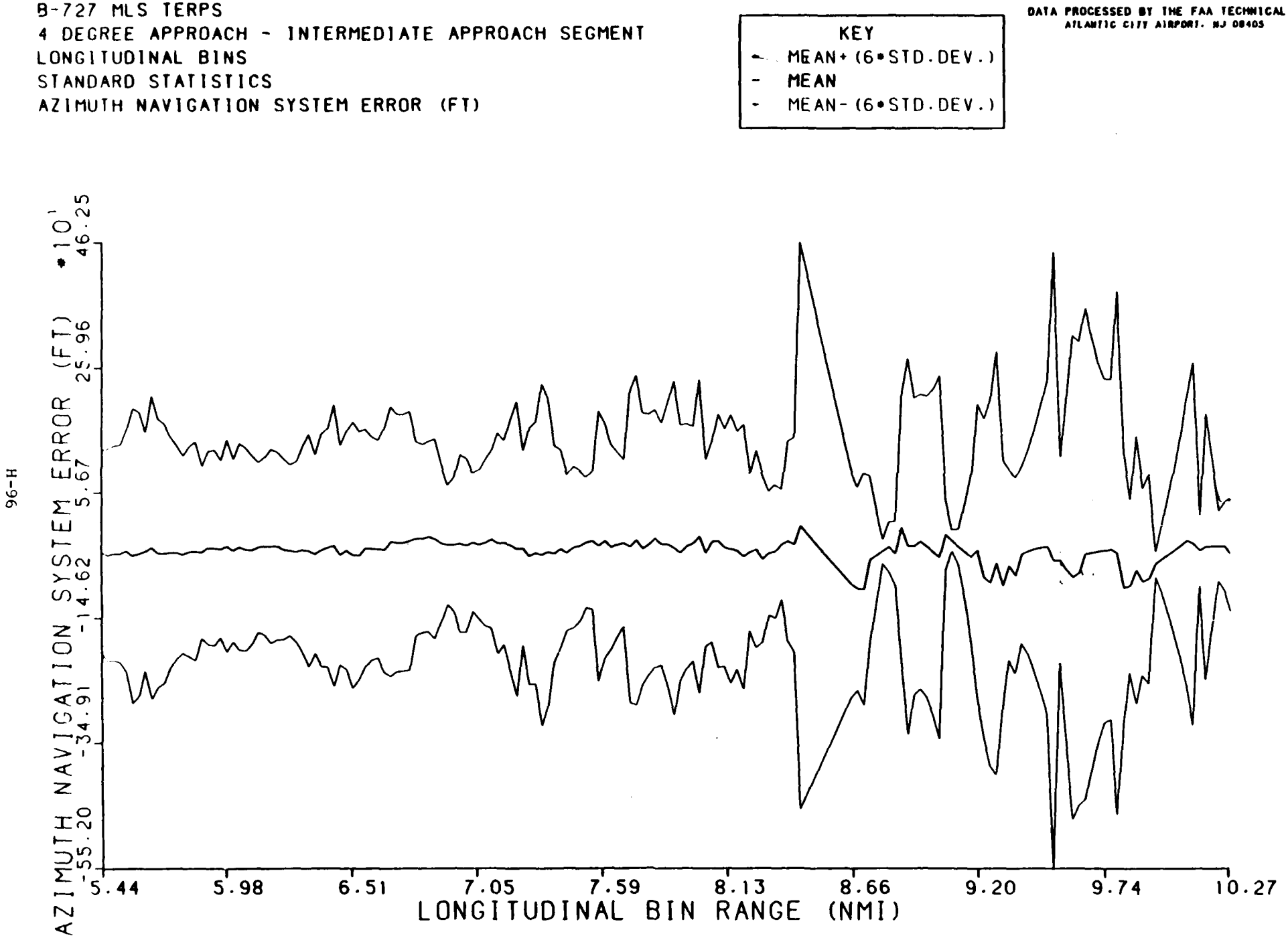
B-727 MLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - INTERMEDIATE APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

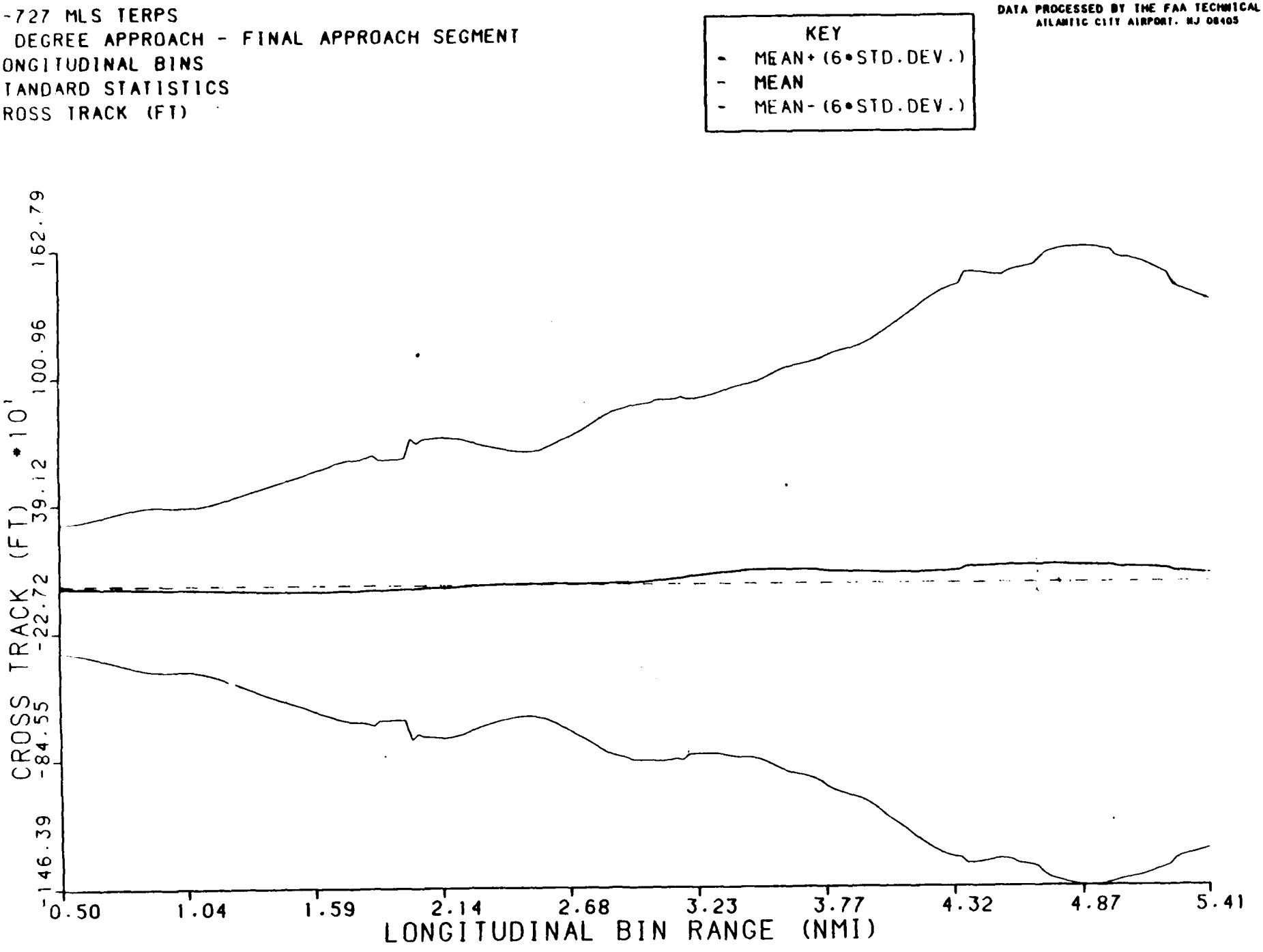
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



96-H

B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

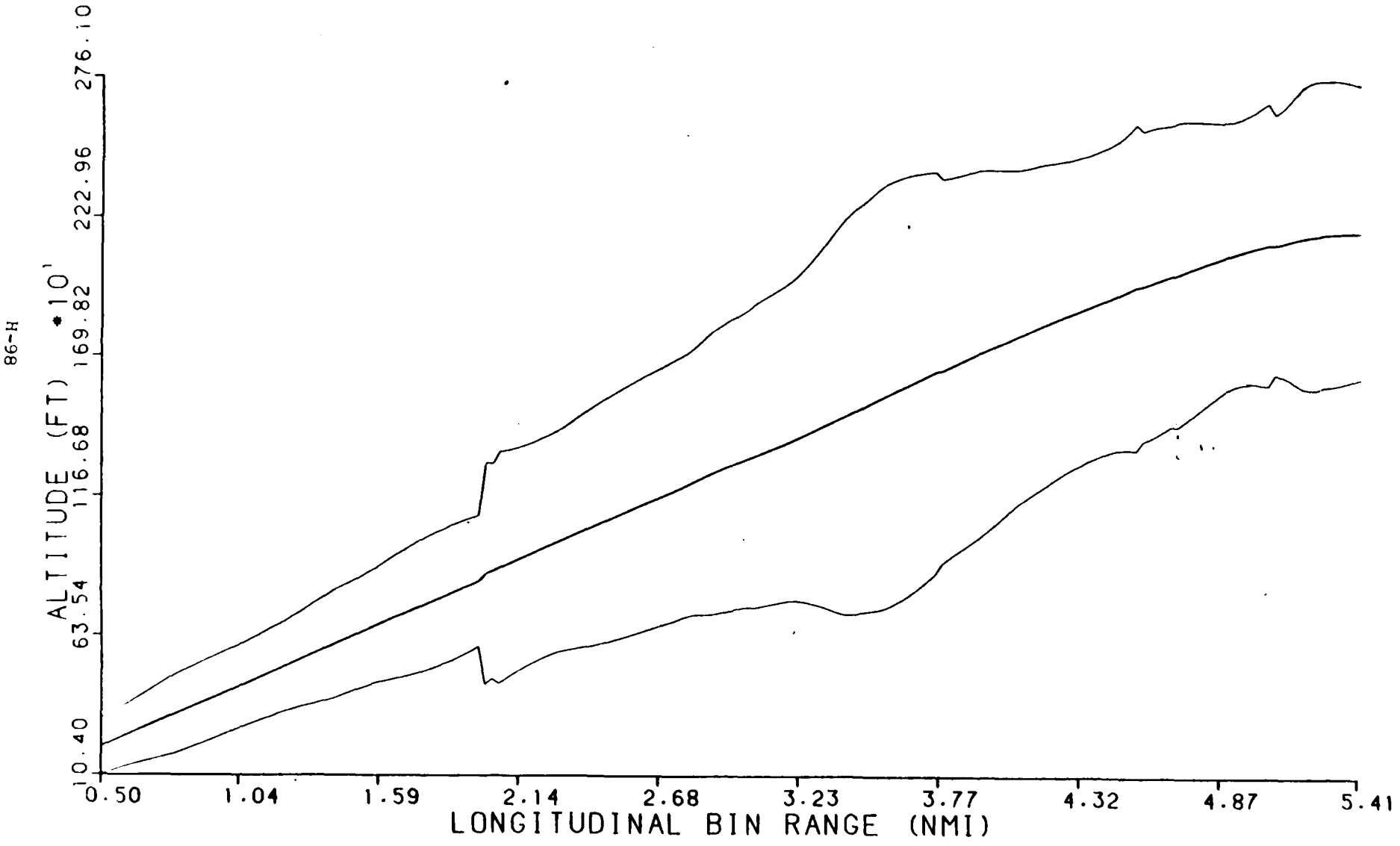
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



86-H

B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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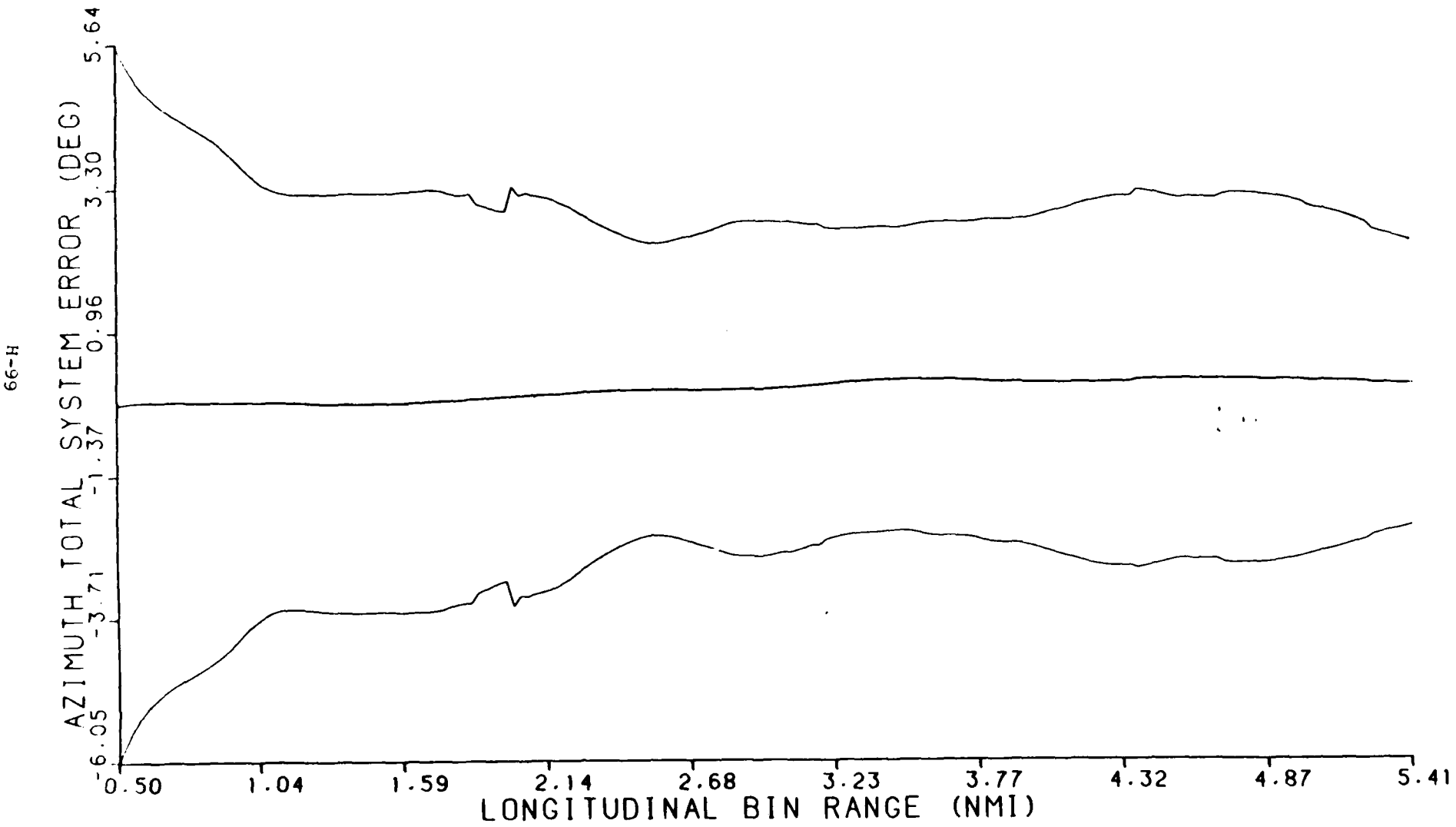
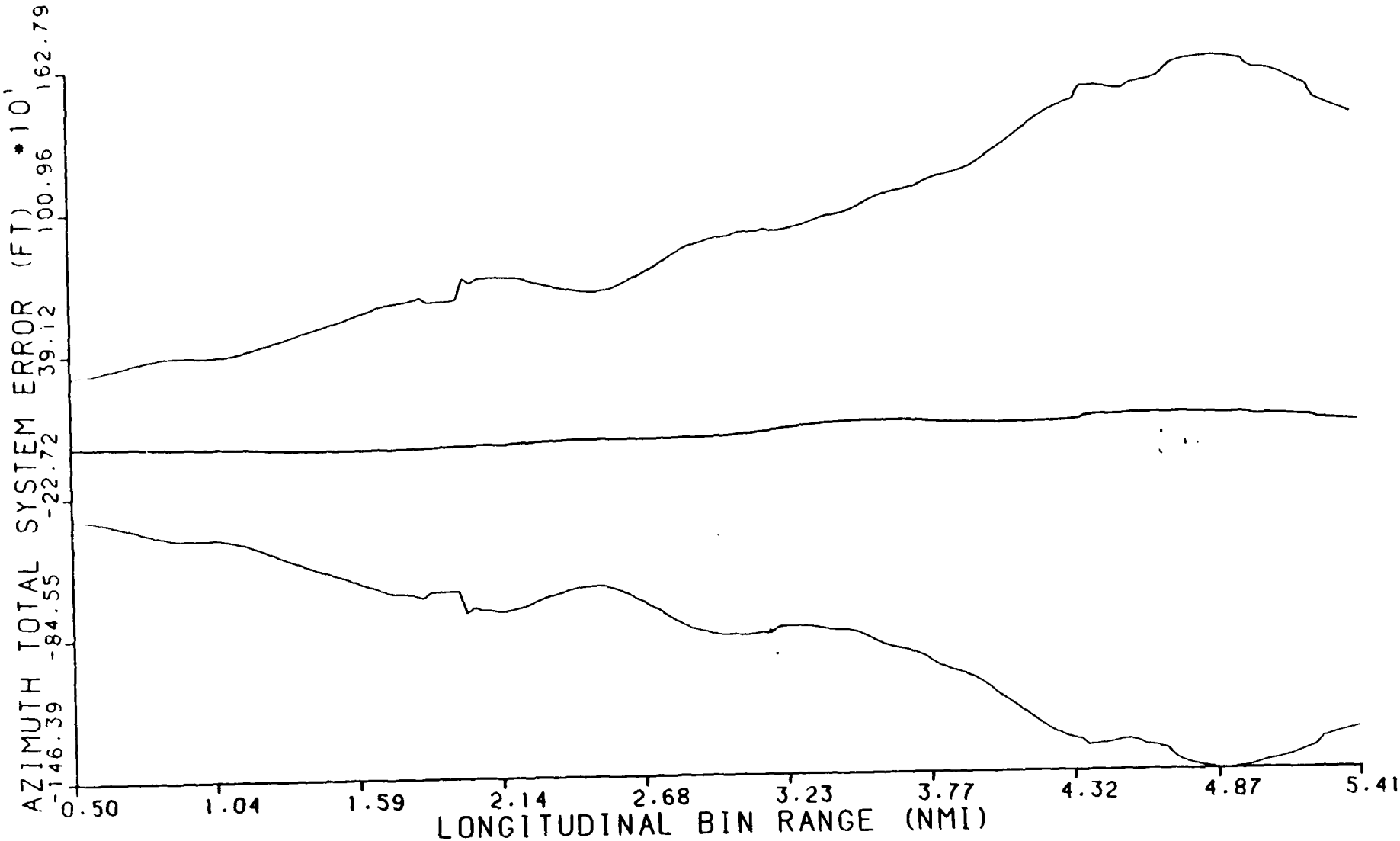
- MEAN
- MEAN-(6*STD.DEV.)



B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH TOTAL SYSTEM ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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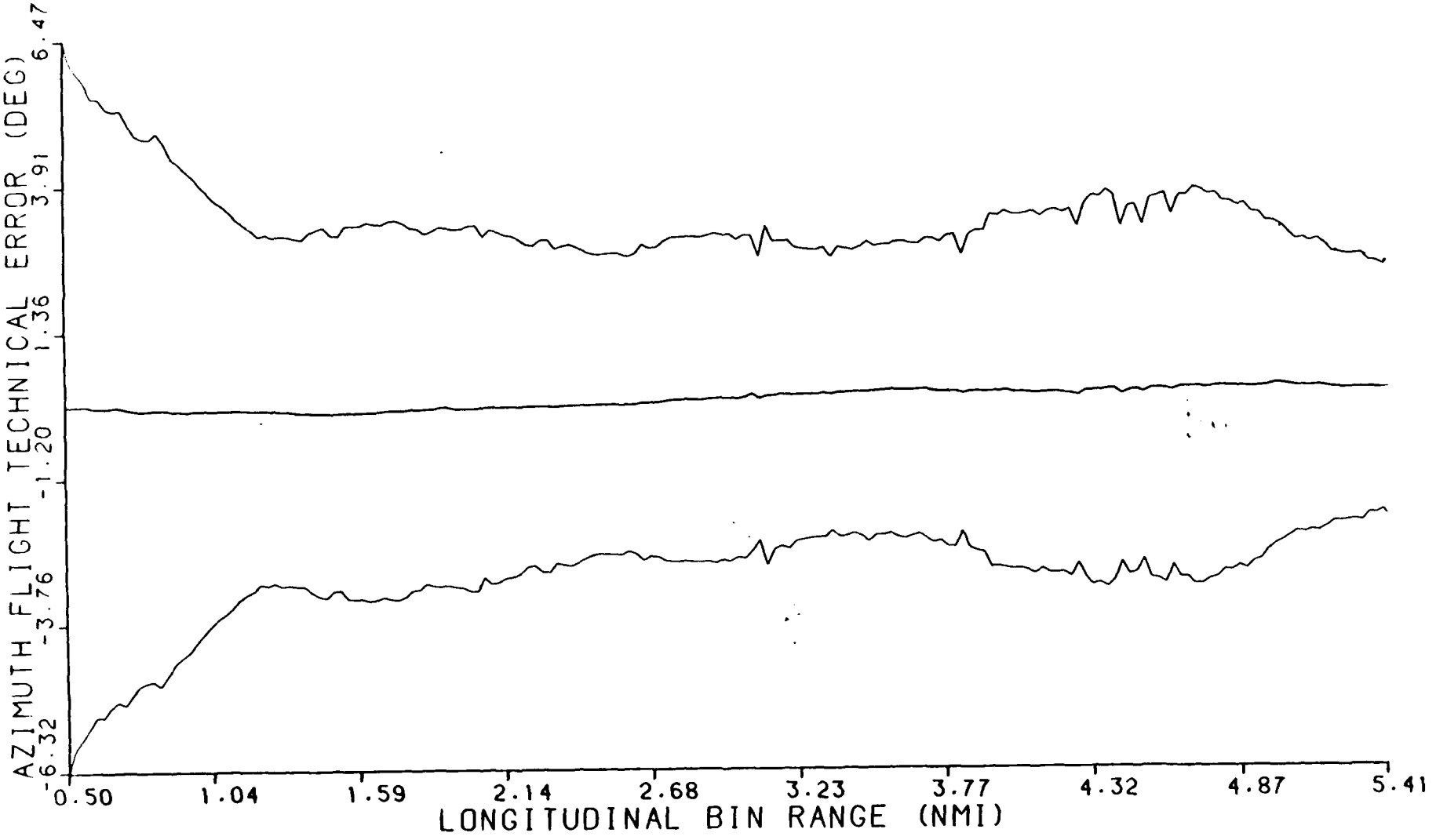
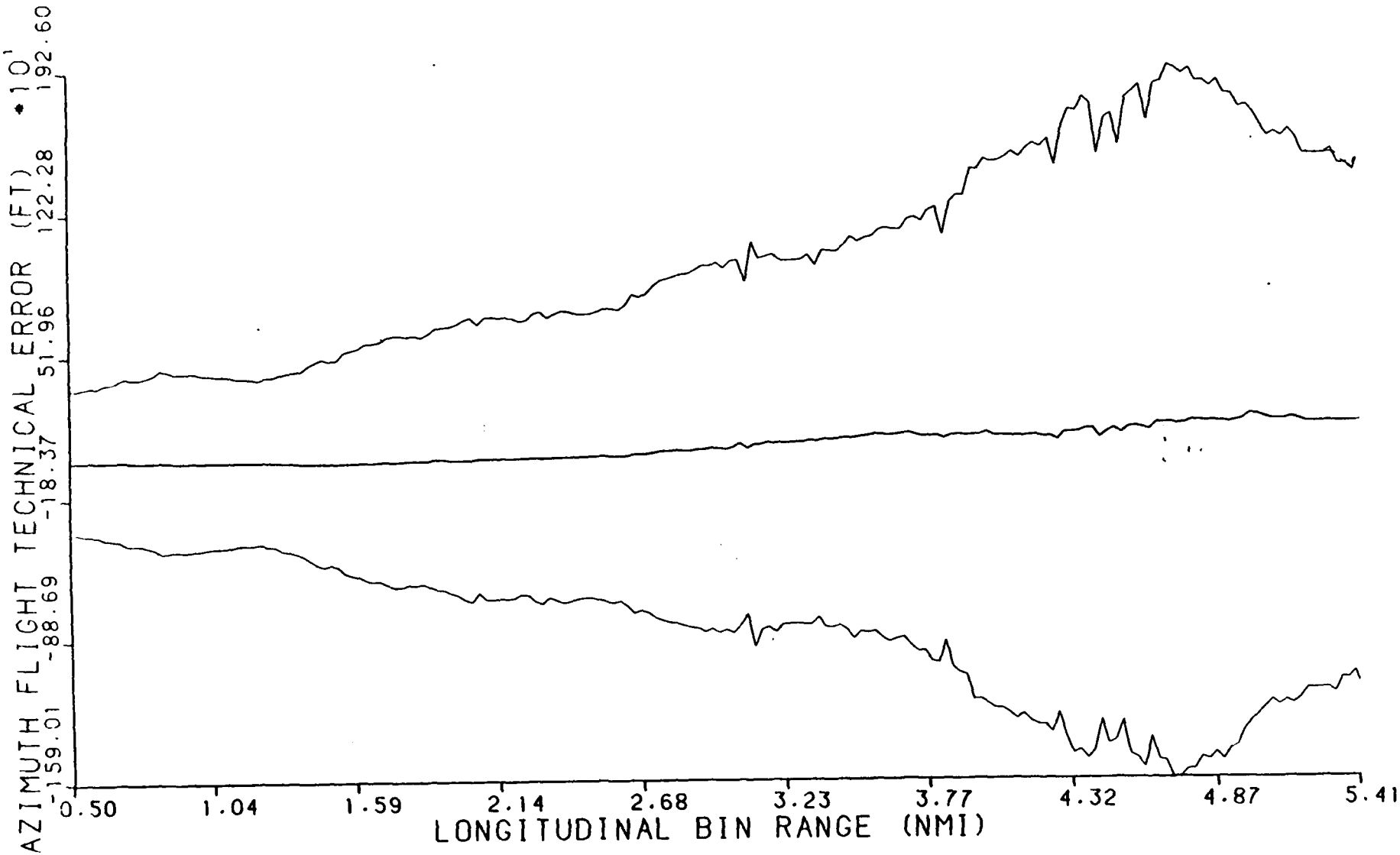
- MEAN
- MEAN-(6*STD.DEV.)



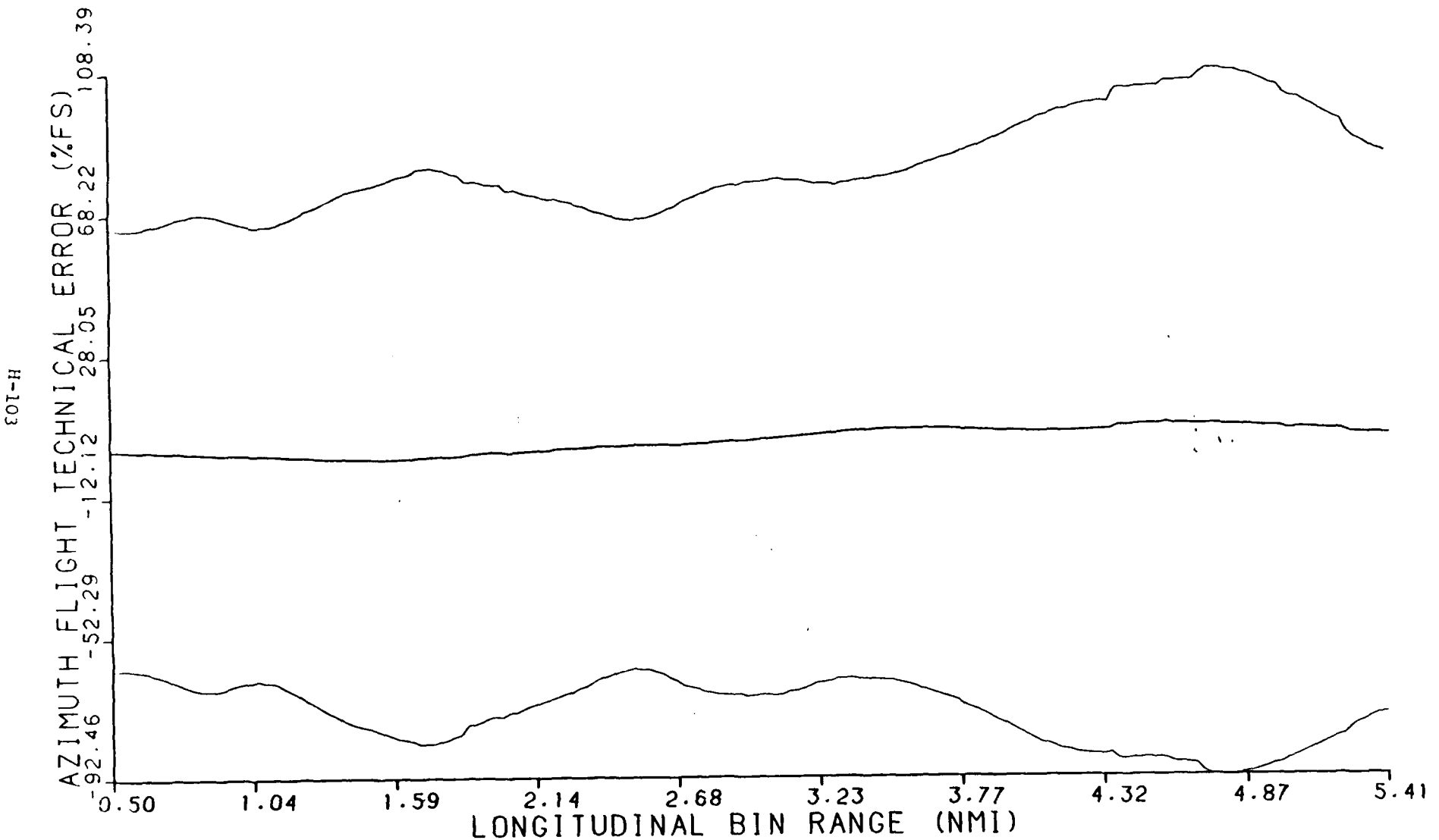
B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



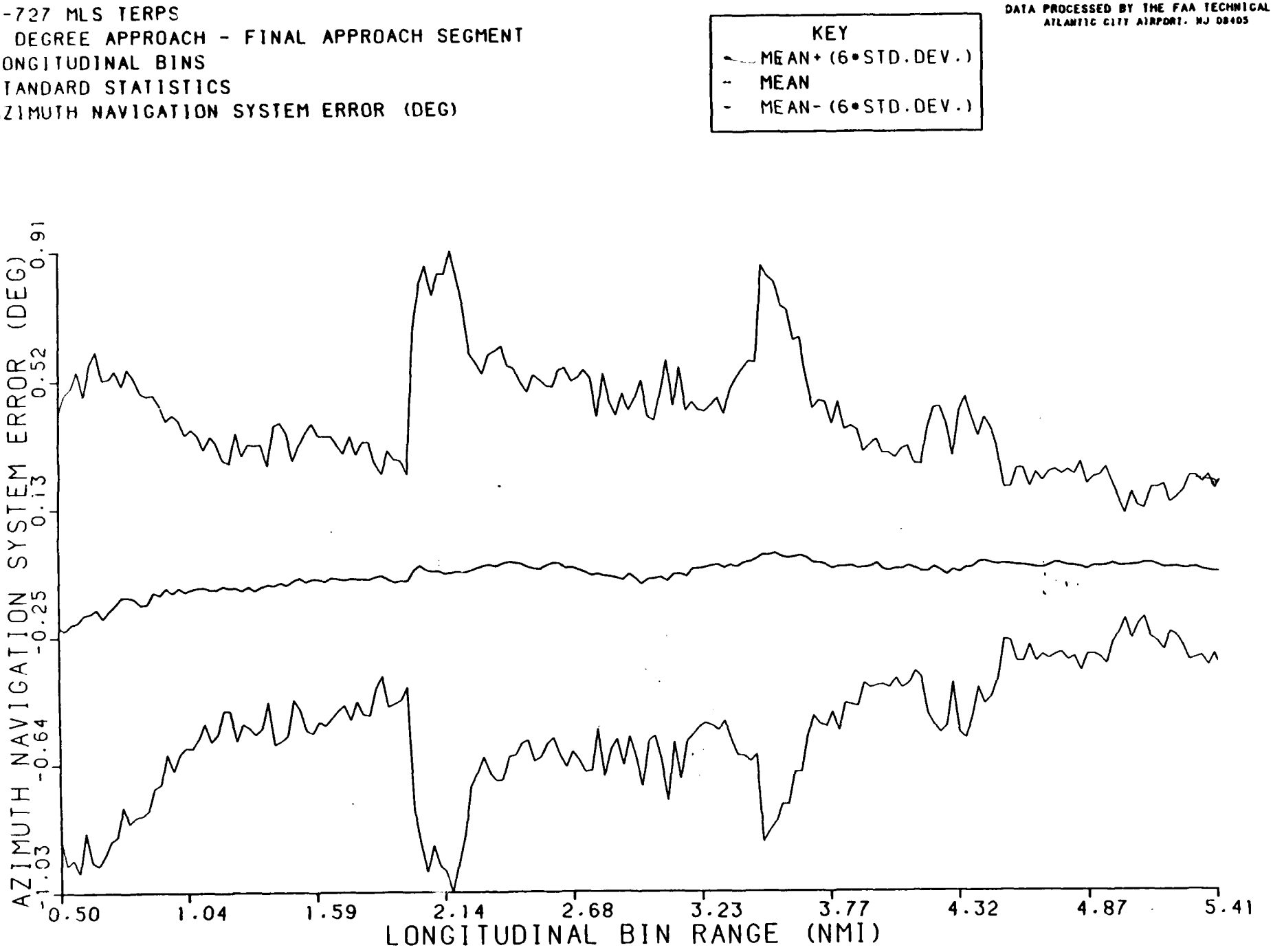
B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH FLIGHT TECHNICAL ERROR (%FS)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



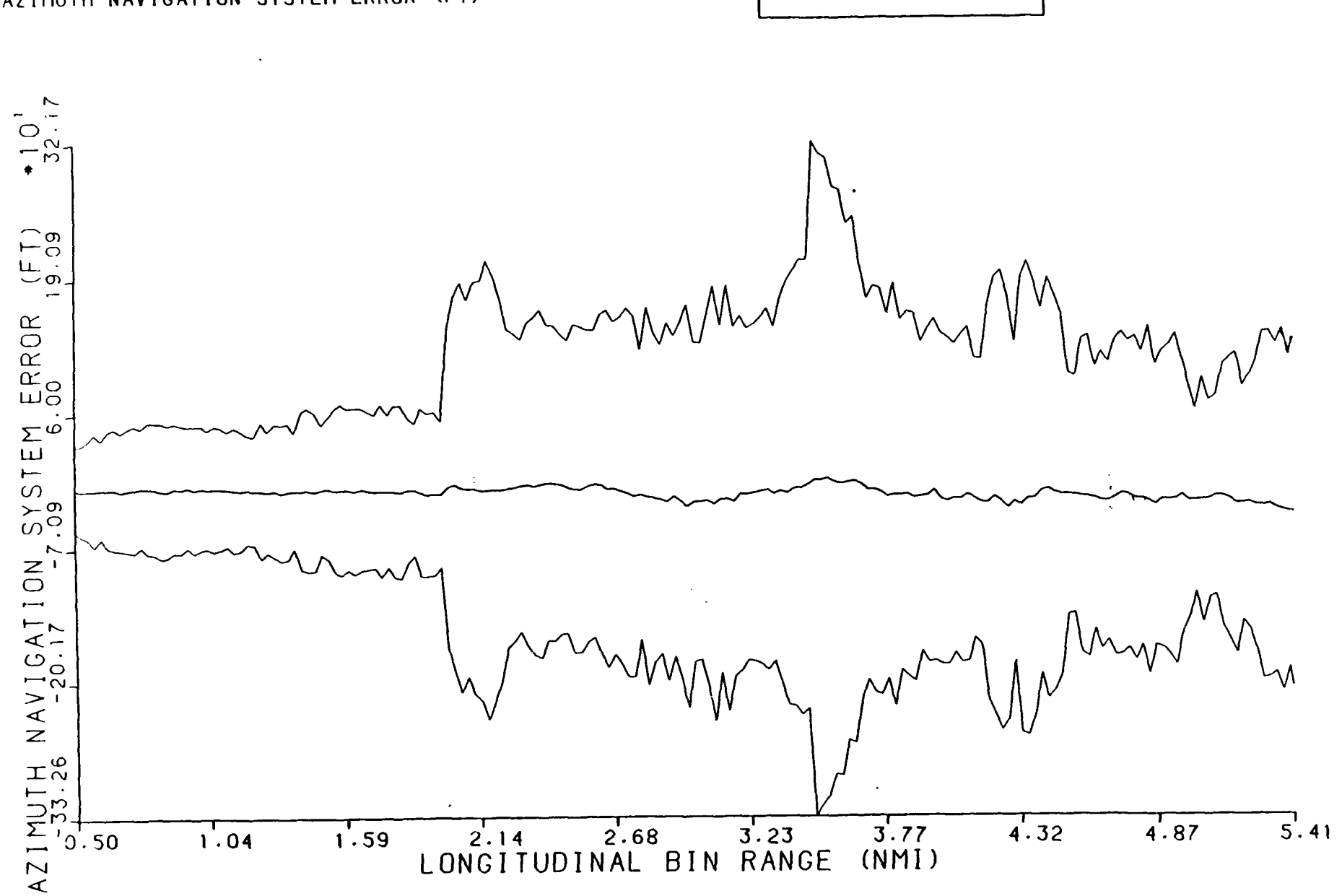
B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
AZIMUTH NAVIGATION SYSTEM ERROR (FT)

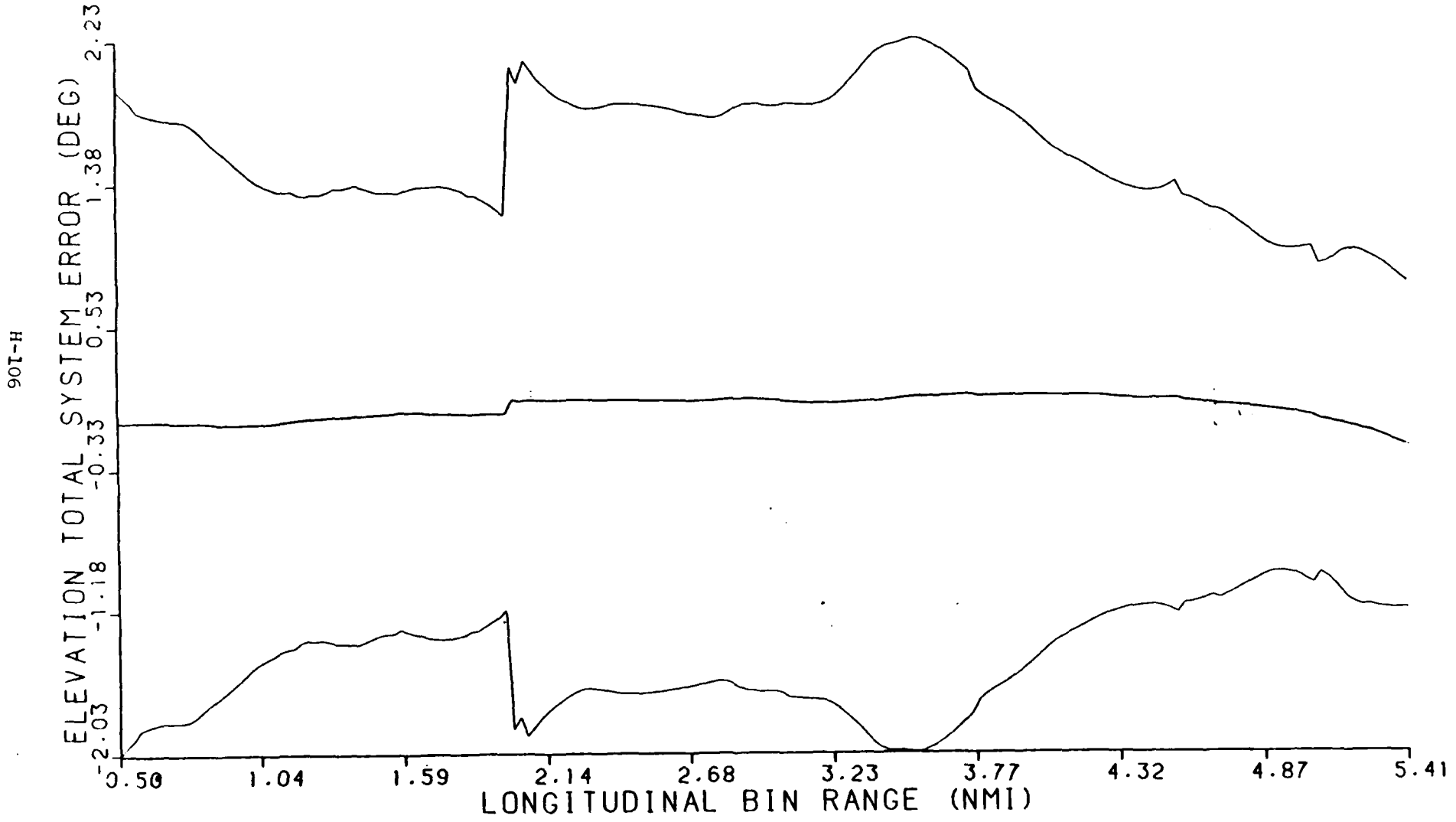
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (DEG)

KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION TOTAL SYSTEM ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

KEY
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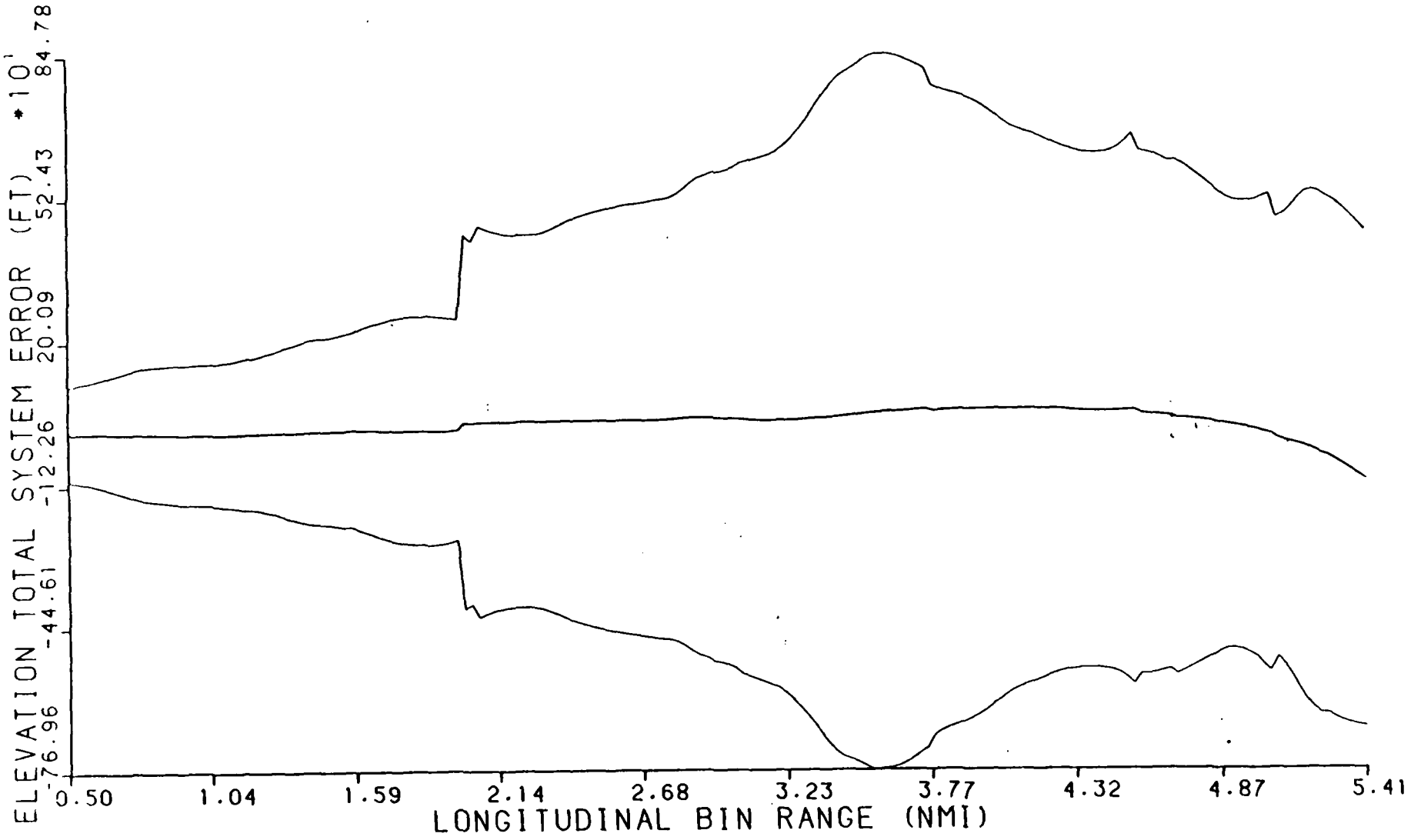
- MEAN
- MEAN-(6*STD.DEV.)

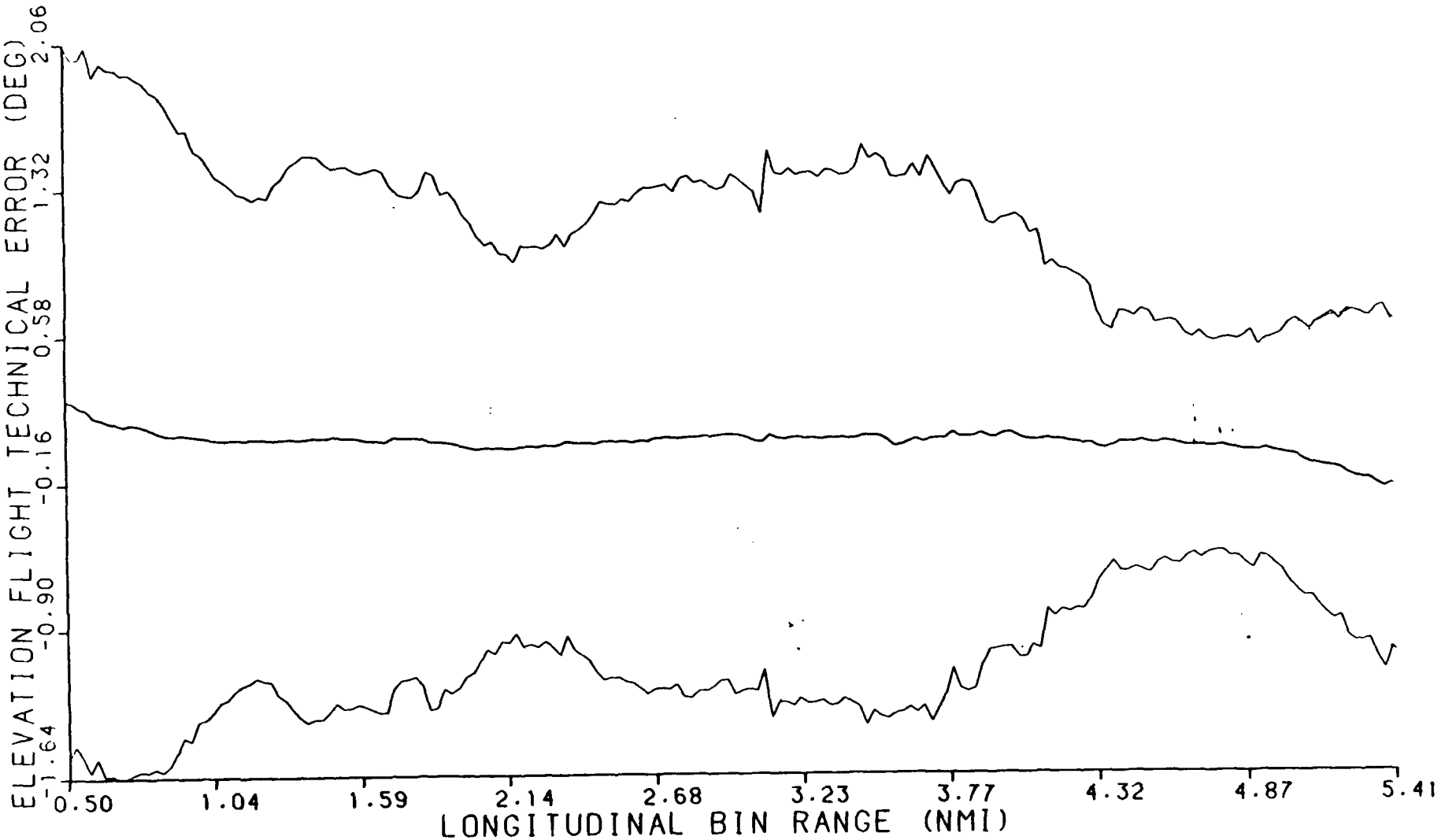


H-107

B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

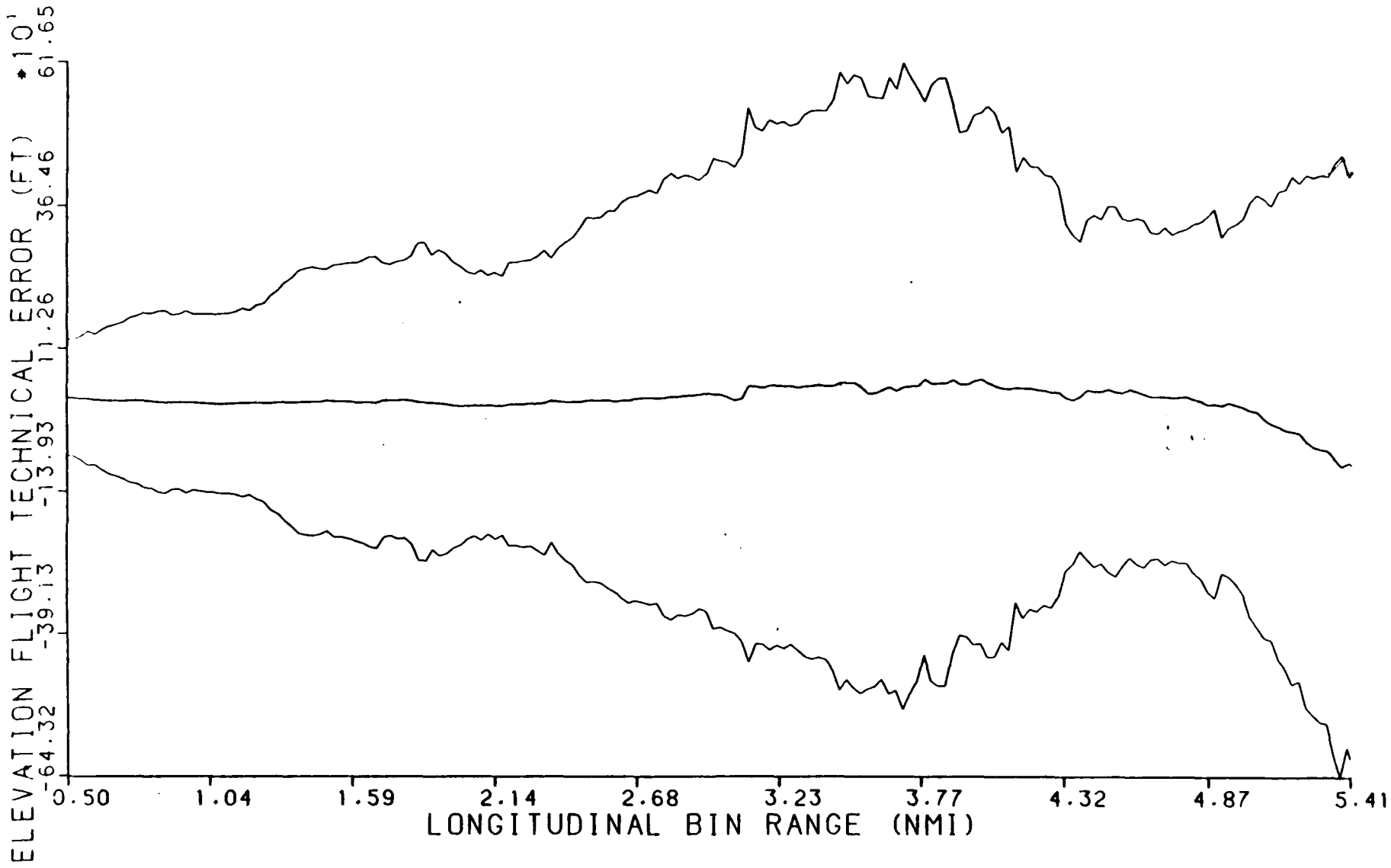
KEY
- MEAN+(6*STD.DEV.)
- MEAN
- MEAN-(6*STD.DEV.)



801-H

B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405

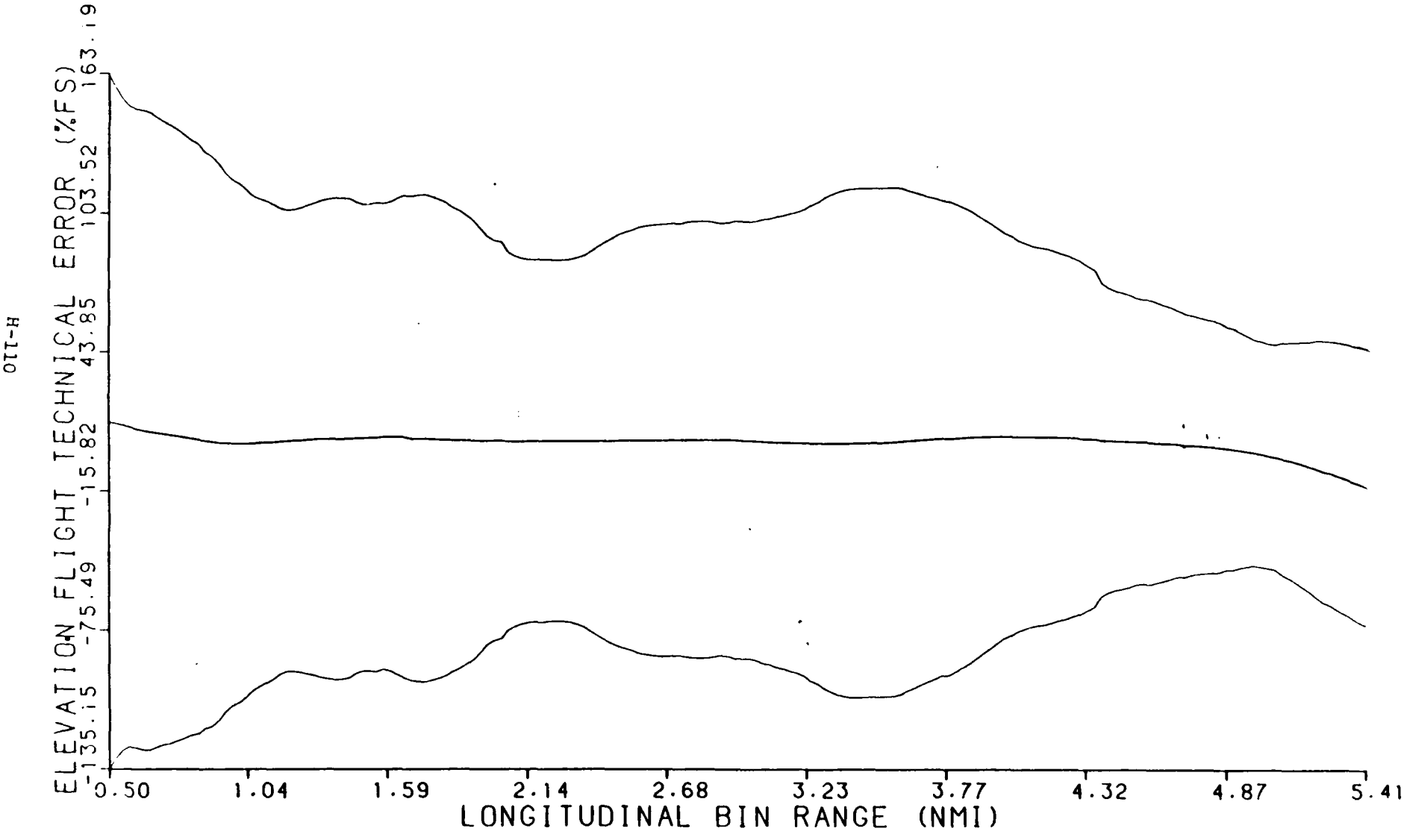


60T-H

B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION FLIGHT TECHNICAL ERROR (%FS)

KEY
- MEAN+(6*STD.DEV.)
-- MEAN
- MEAN-(6*STD.DEV.)

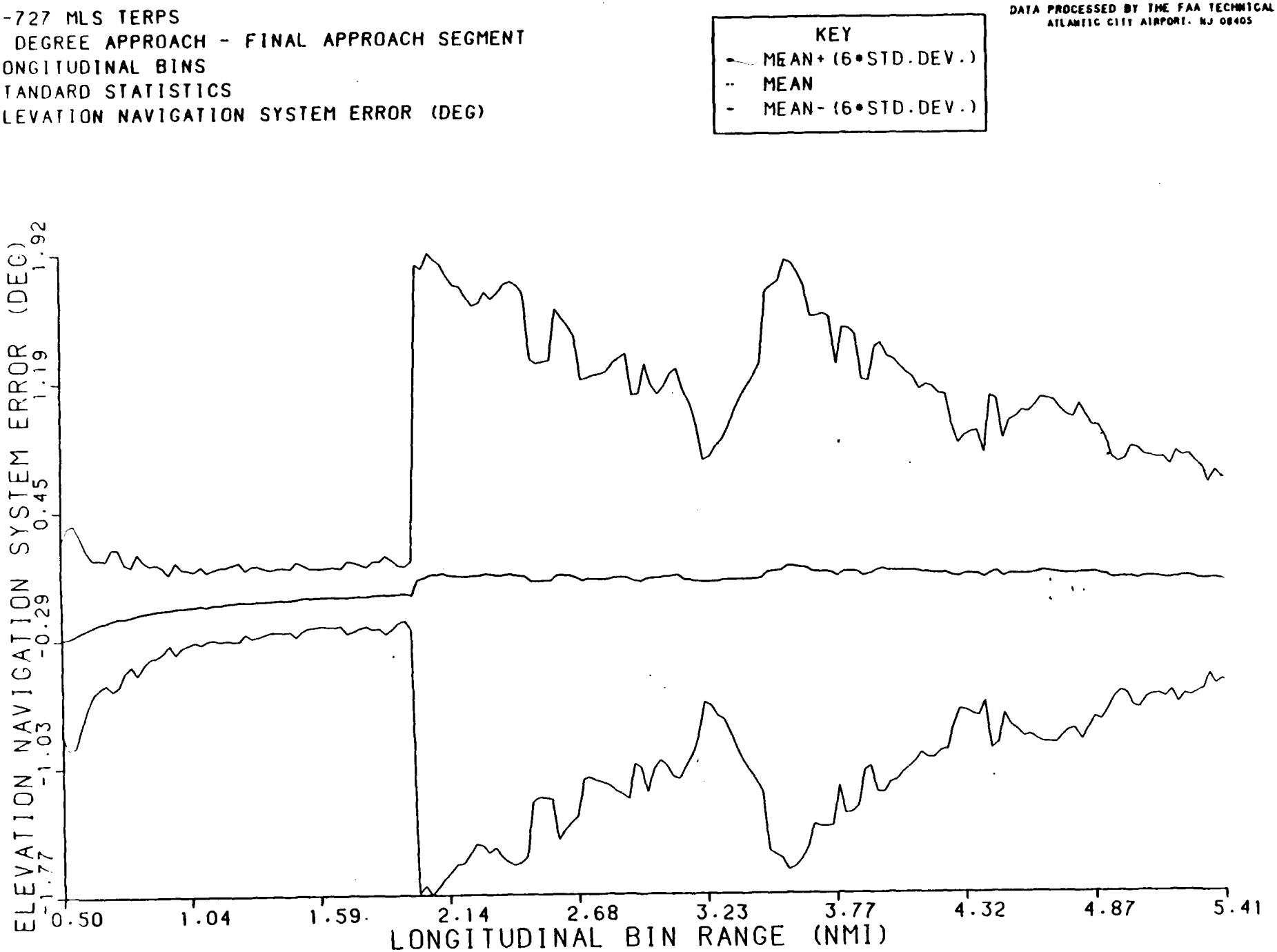
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



OTT-H

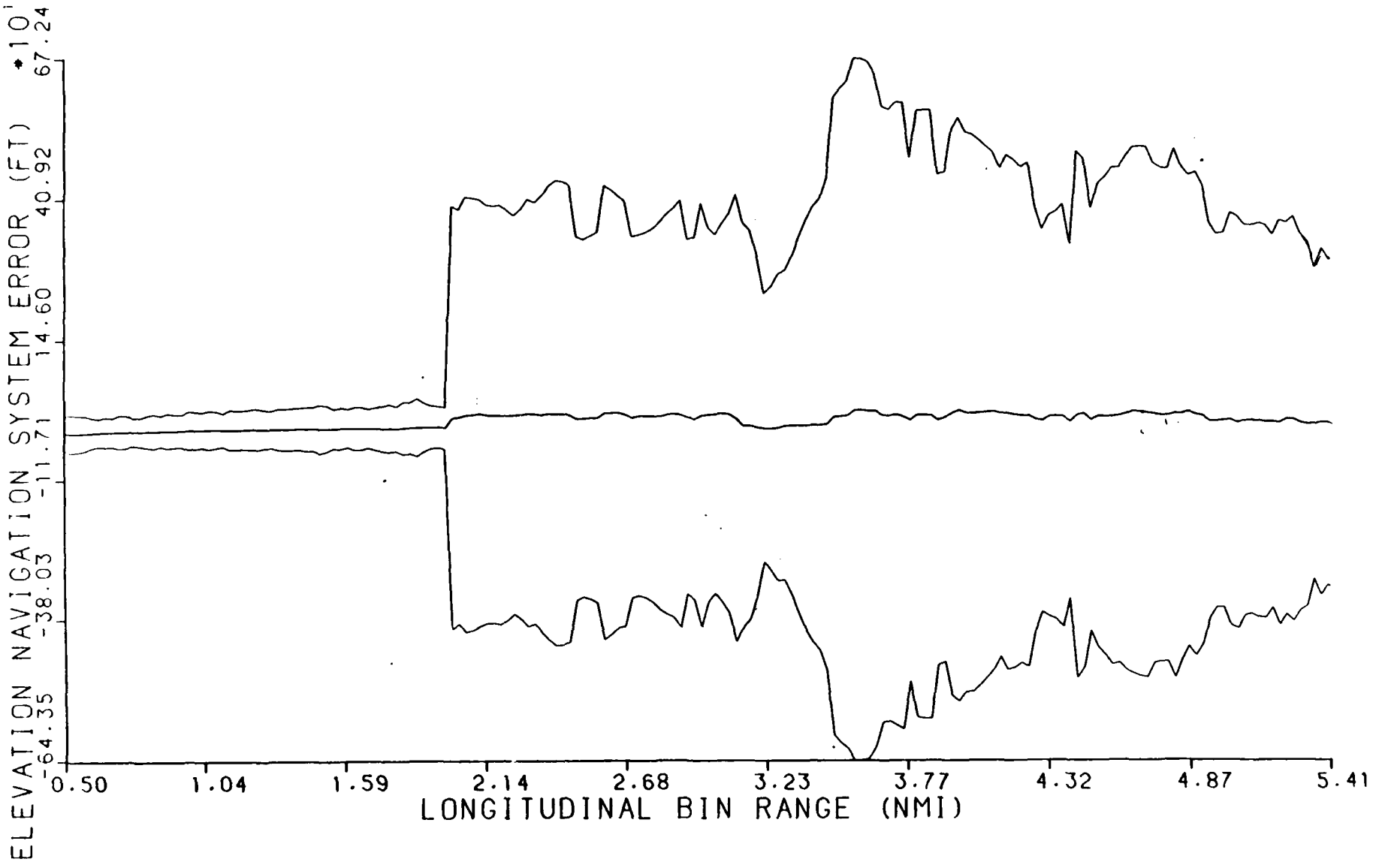
B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (DEG)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - FINAL APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ELEVATION NAVIGATION SYSTEM ERROR (FT)

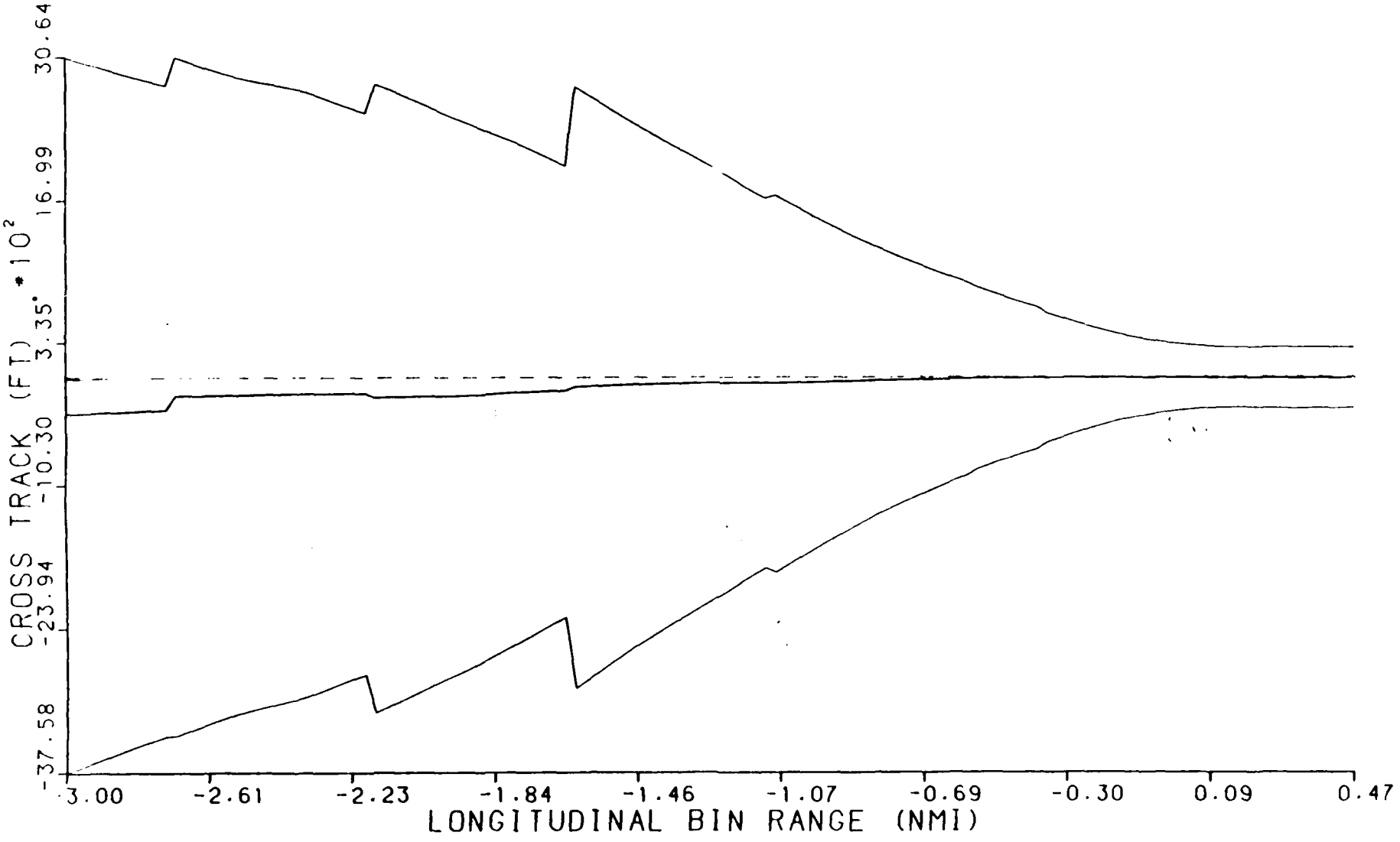
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

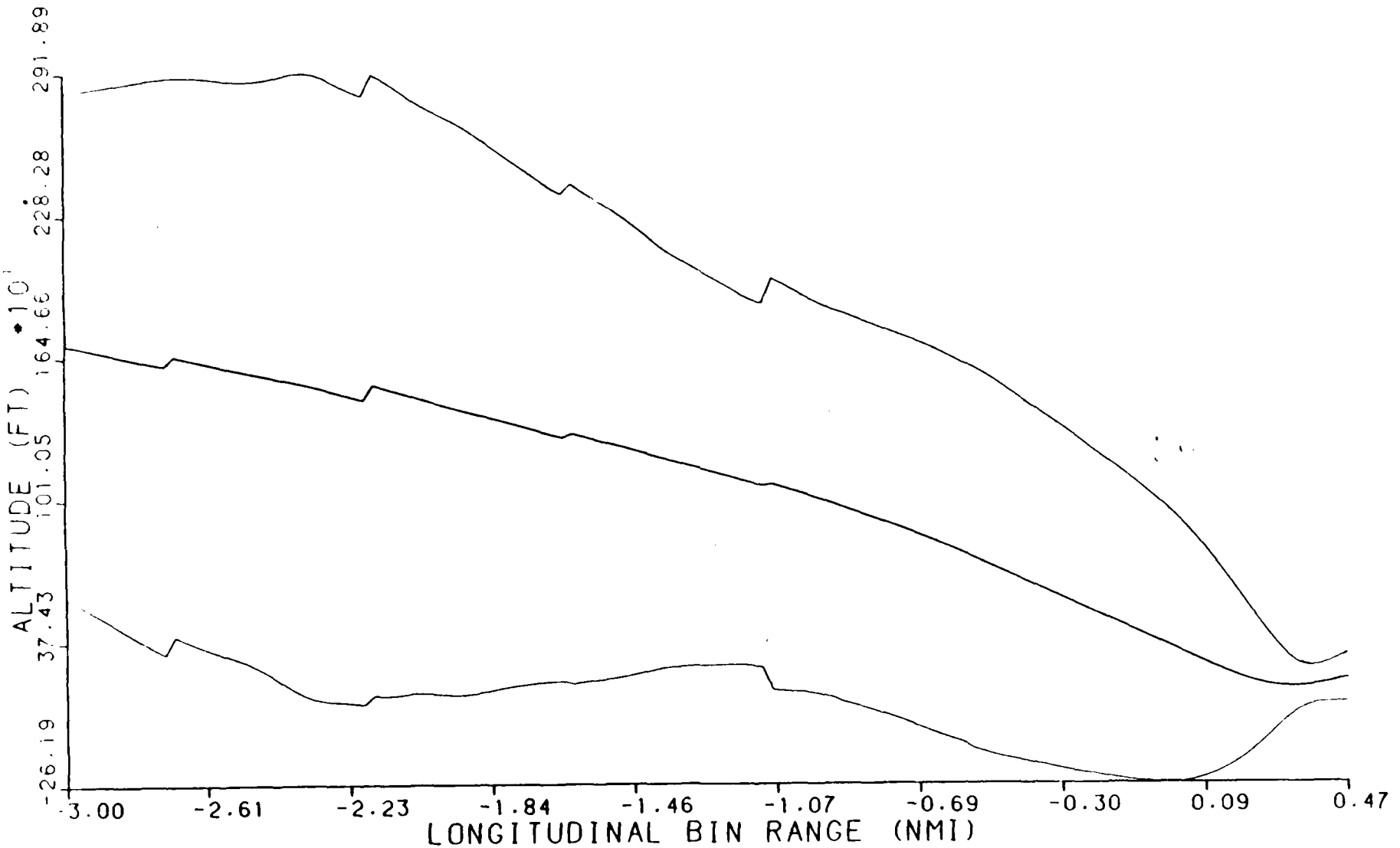
KEY
- MEAN+ (6*STD.DEV.)
- MEAN
- MEAN- (6*STD.DEV.)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



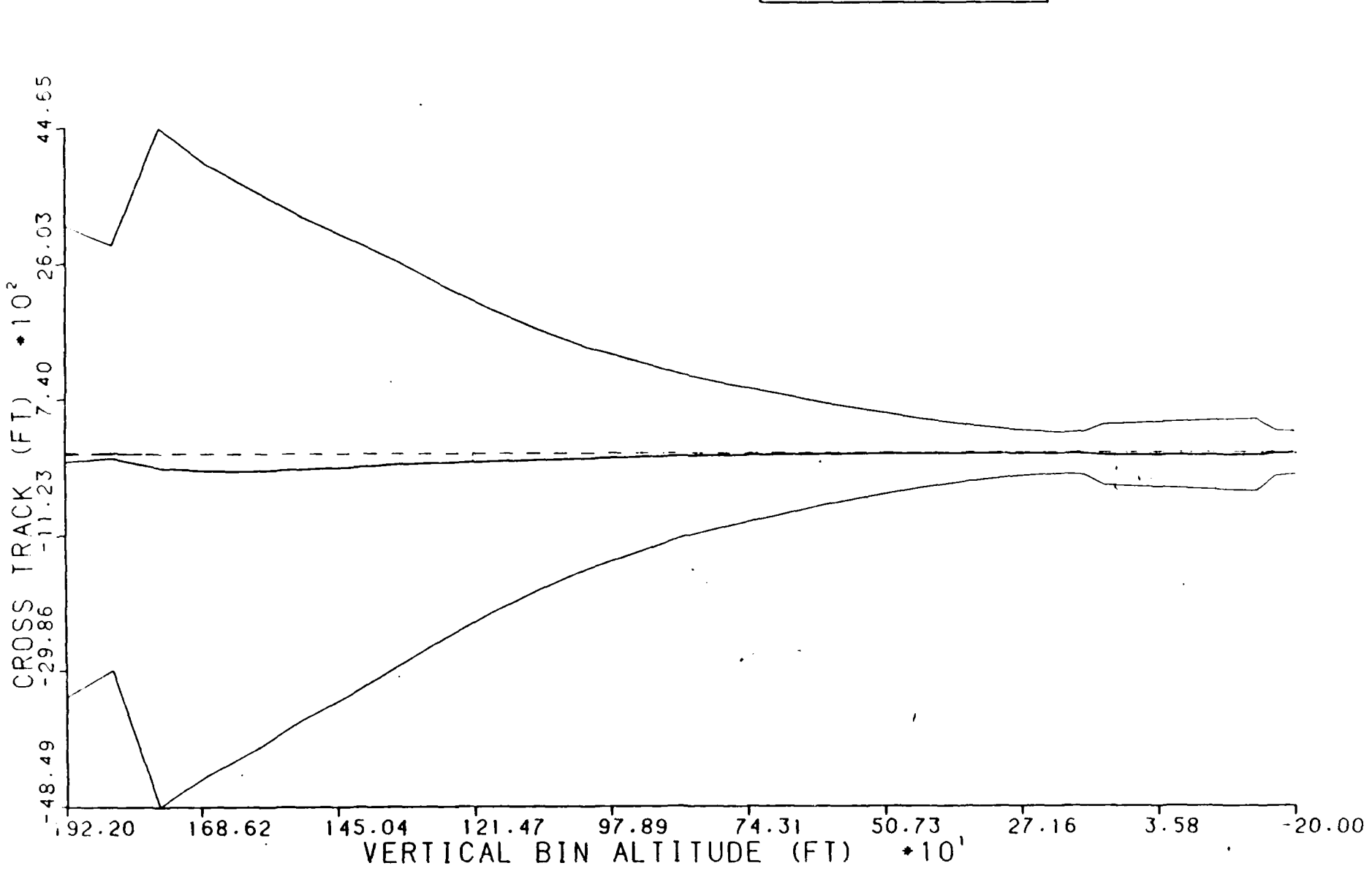
B-727 MLS TERPS
4 DEGREE APPROACH - MISSED APPROACH SEGMENT
LONGITUDINAL BINS
STANDARD STATISTICS
ALTITUDE (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



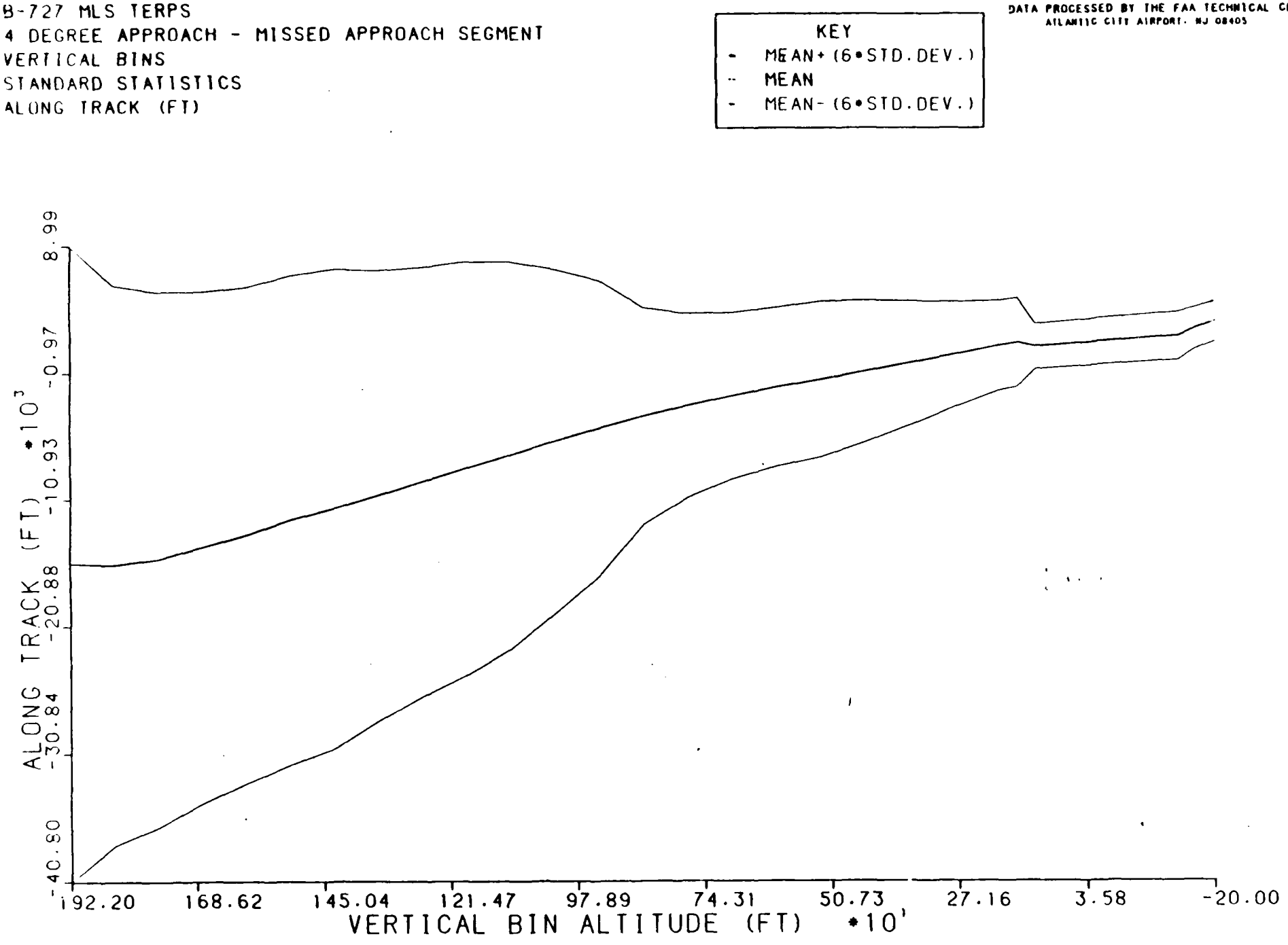
B-727 MLS TERPS
4 DEGREE APPROACH - MISSED APPROACH SEGMENT
VERTICAL BINS
STANDARD STATISTICS
CROSS TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
4 DEGREE APPROACH - MISSED APPROACH SEGMENT
VERTICAL BINS
STANDARD STATISTICS
ALONG TRACK (FT)

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



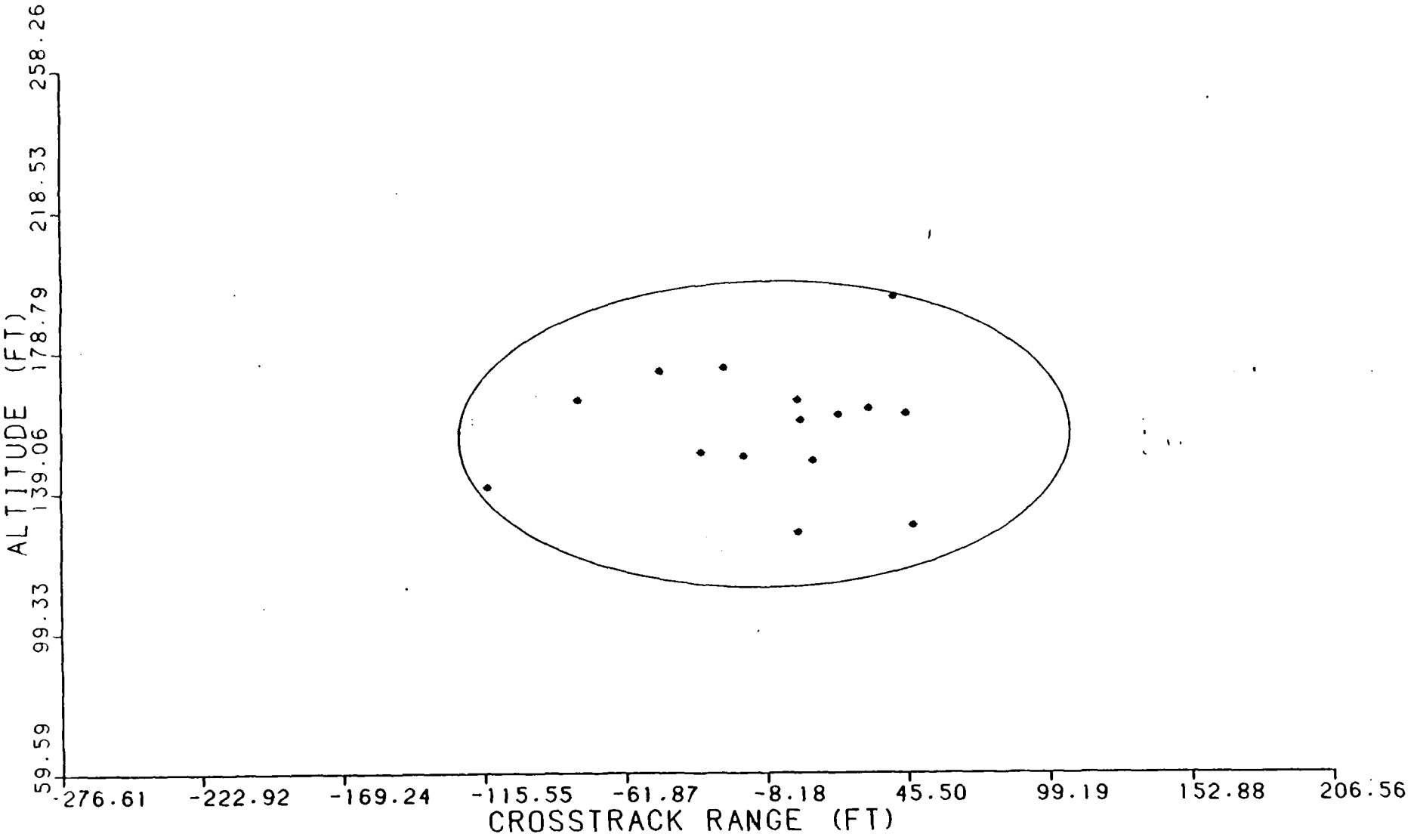
9TT-H

APPENDIX I

SAMPLE LANDING SEGMENT SCATTER PLOTS

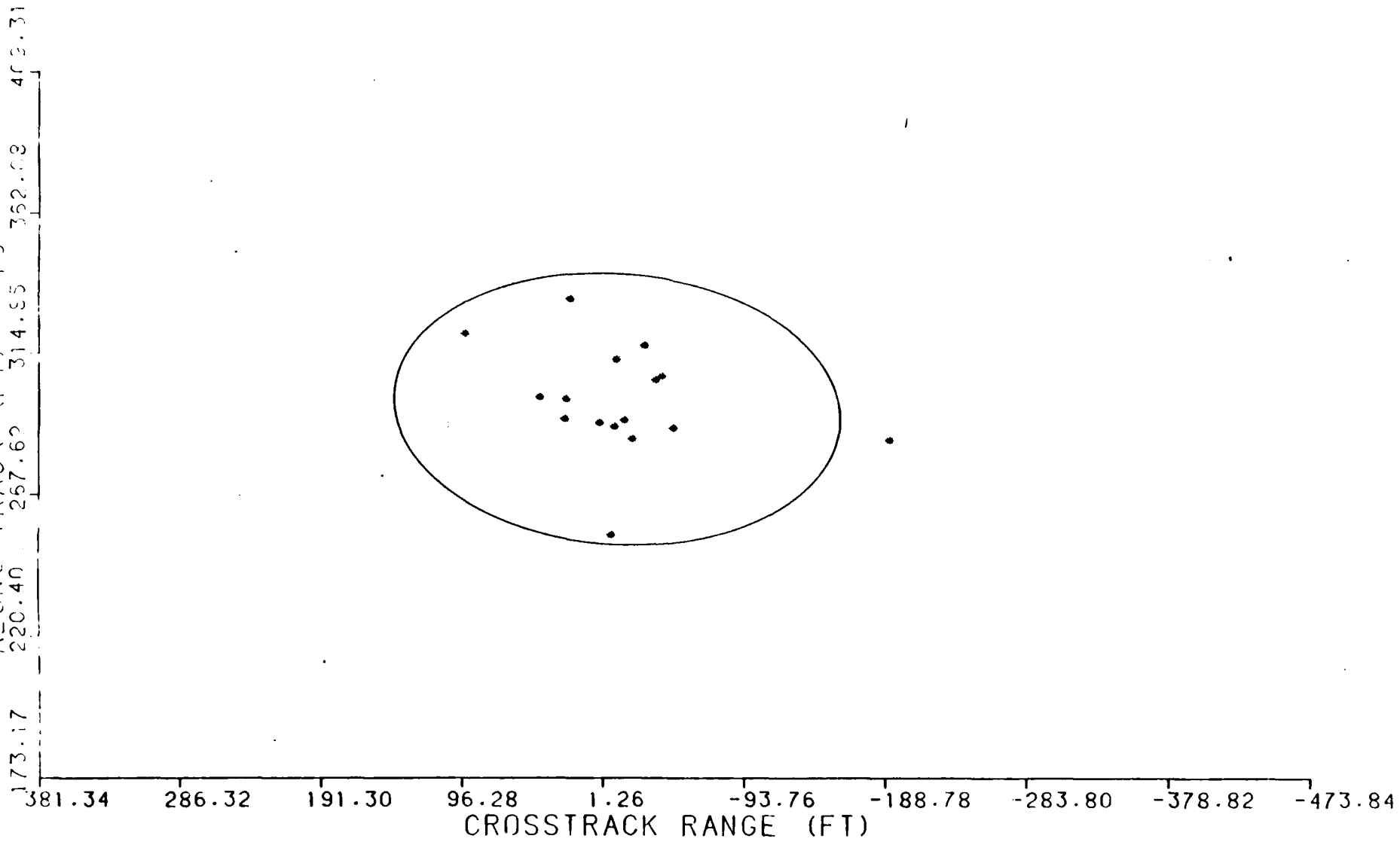
B-727 MLS TERPS
3.0 DEGREE APPROACH - LANDING SEGMENT
LONGITUDINAL BINS
ALTITUDE (FT) AT RANGE 2922.561

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08045



B-727 MLS TERPS
4.0 DEGREE APPROACH - LANDING SEGMENT
VERTICAL BINS
ALONG TRACK (FT) AT ALTITUDE 200.000

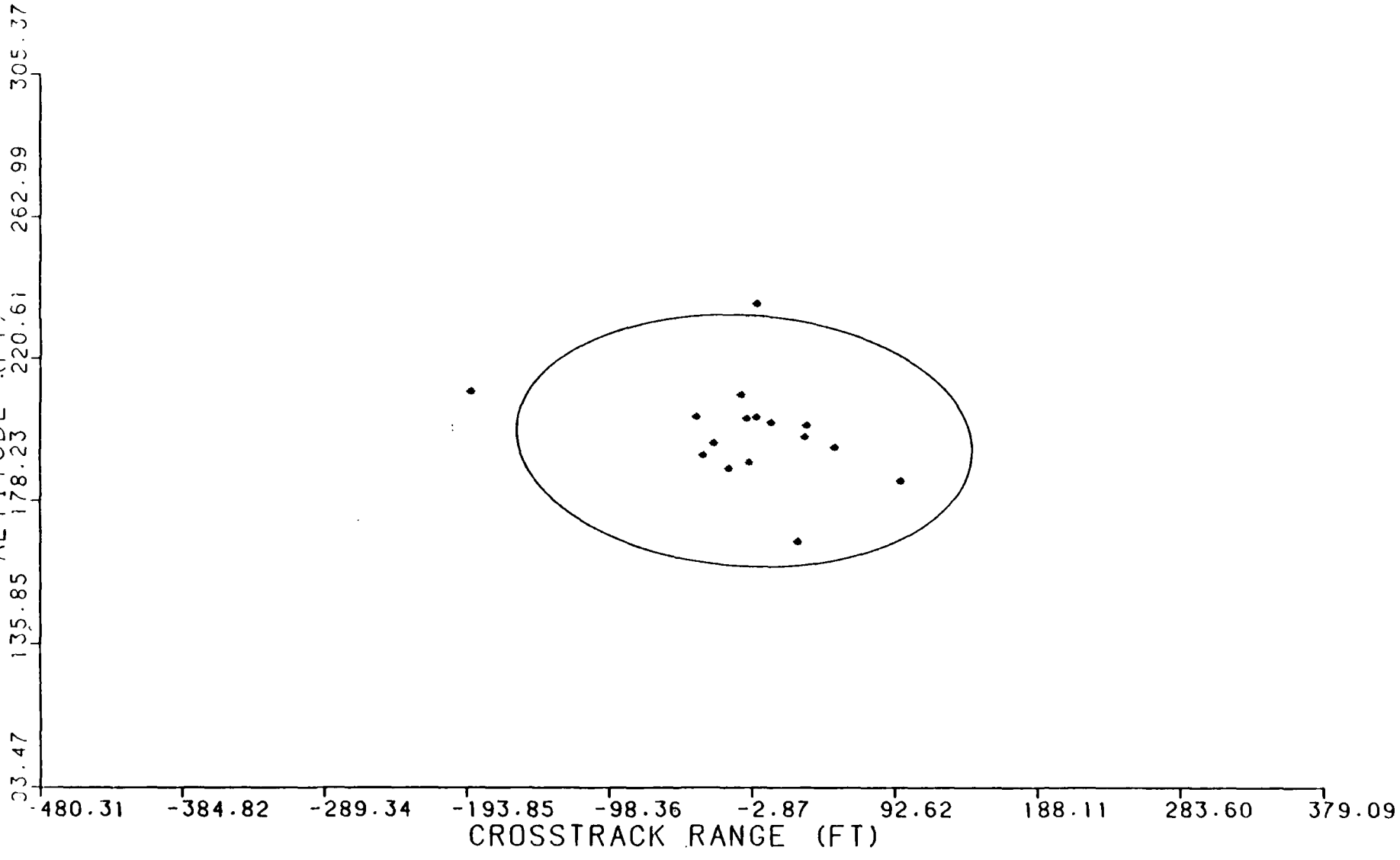
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08045



I-2

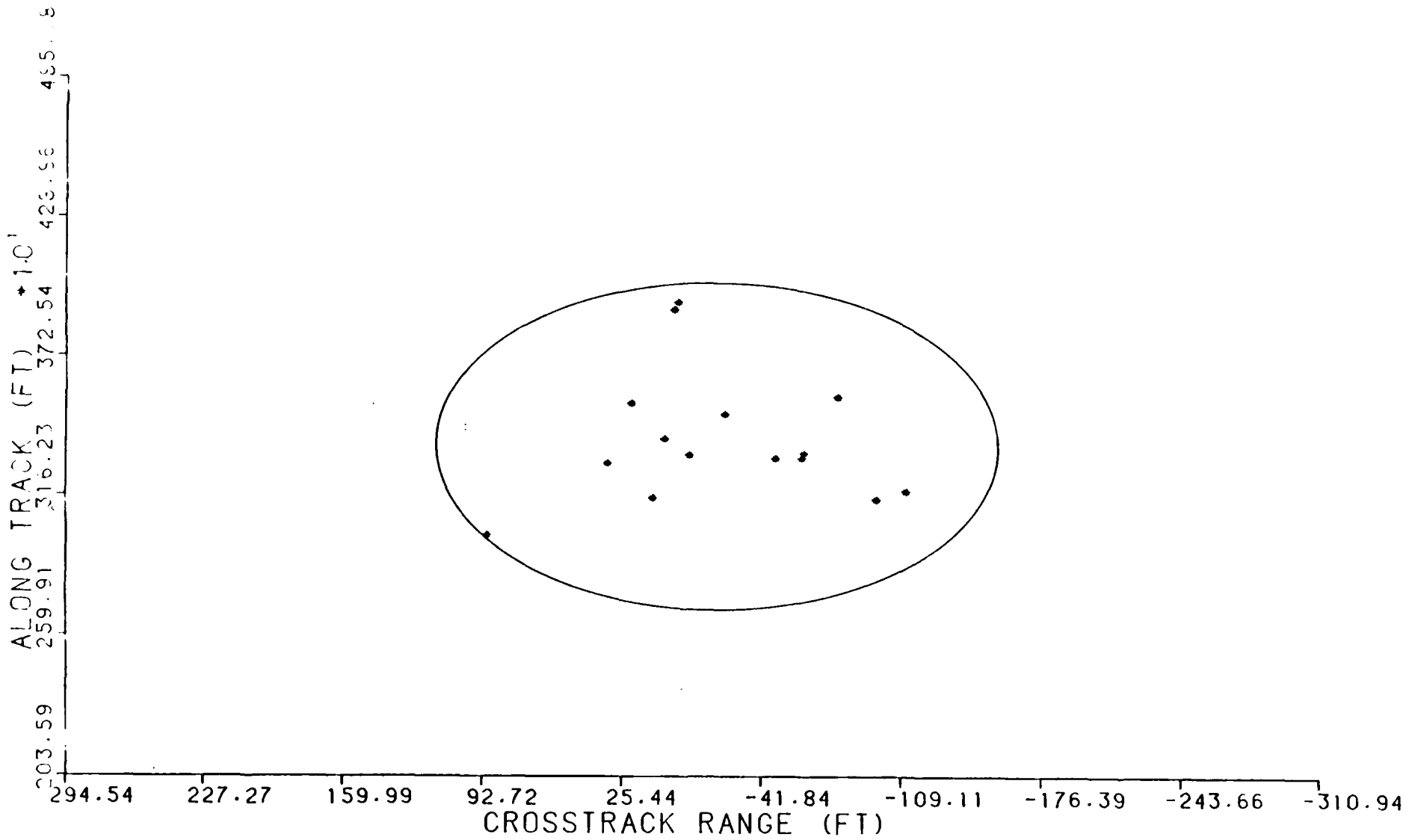
B-727 MLS TERPS
4.0 DEGREE APPROACH - LANDING SEGMENT
LONGITUDINAL BINS
ALTITUDE (FT) AT RANGE 2847.579

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



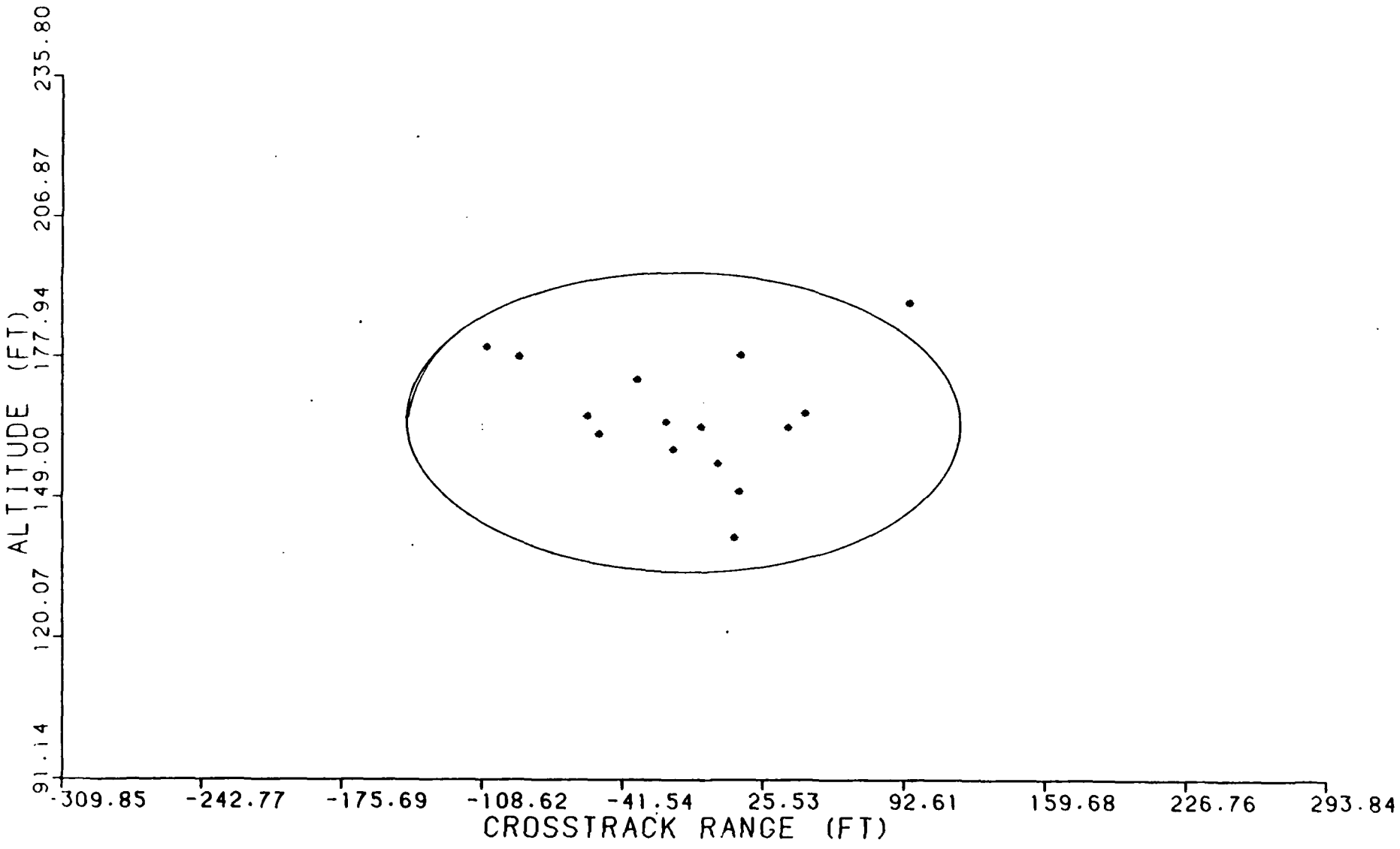
B-727 MLS TERPS
3.5 DEGREE APPROACH - LANDING SEGMENT
VERTICAL BINS
ALONG TRACK (FT) AT ALTITUDE 200.000

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08045



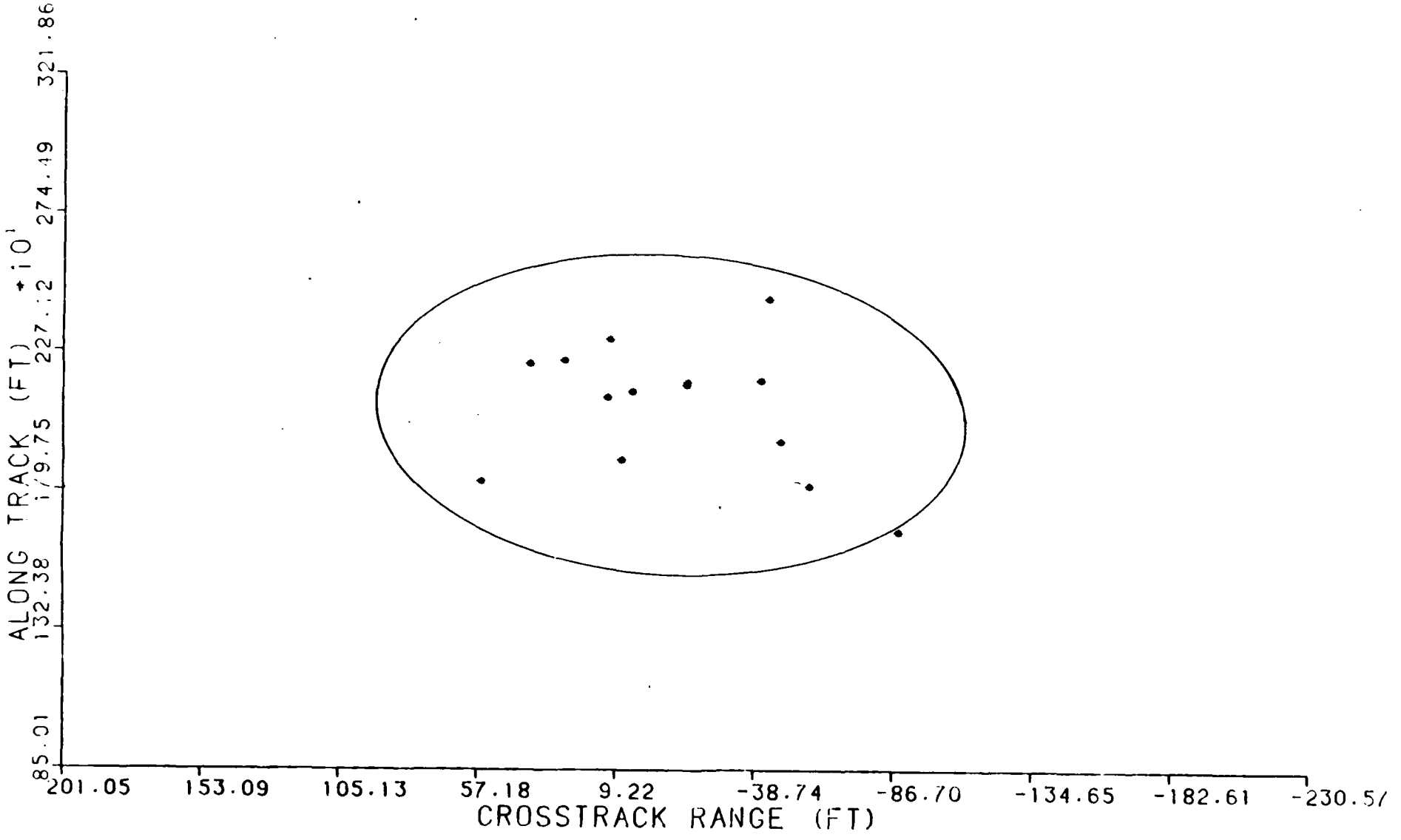
B-727 MLS TERPS
3.5 DEGREE APPROACH - LANDING SEGMENT
LONGITUDINAL BINS
ALTITUDE (FT) AT RANGE 2785.997

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08045



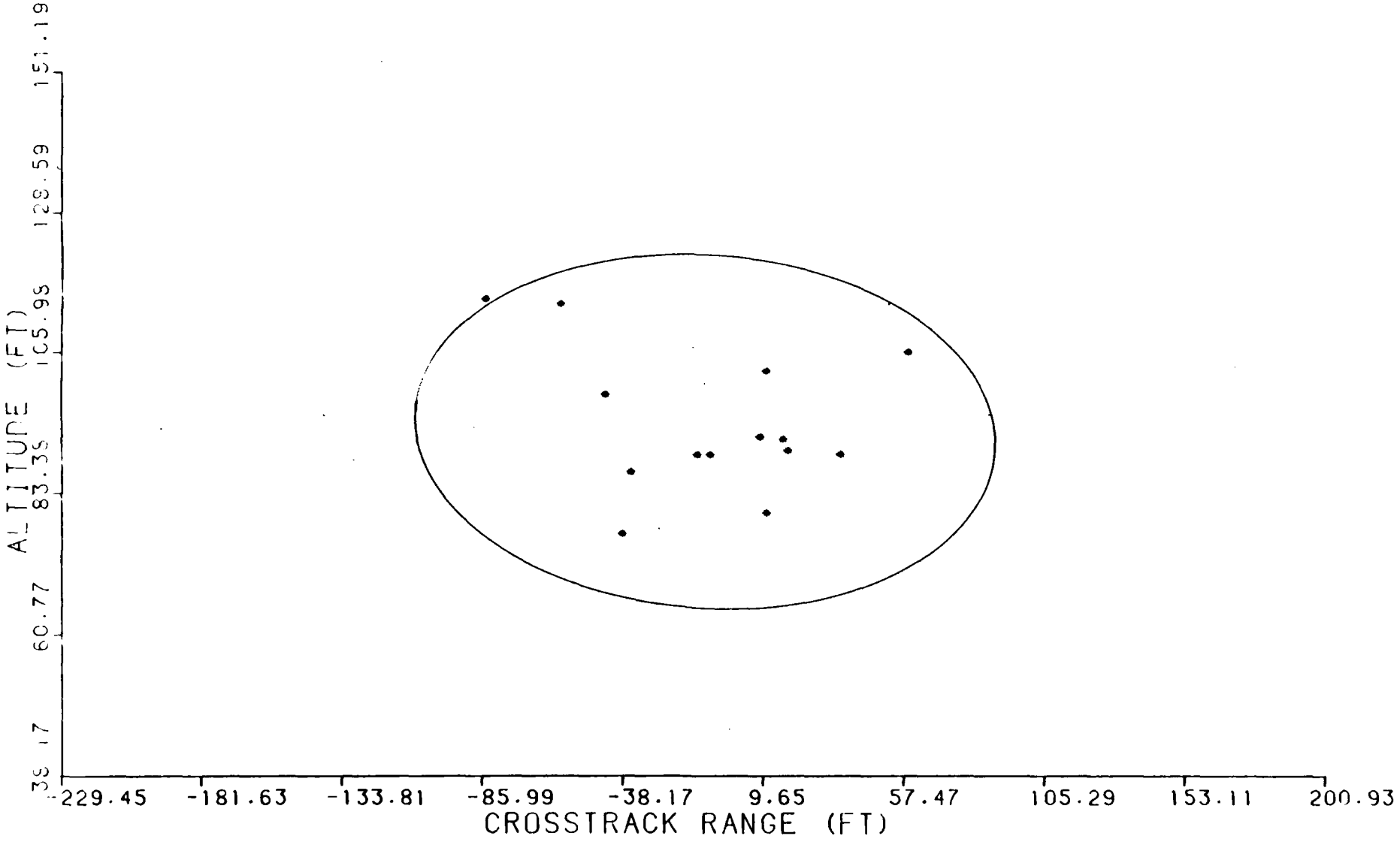
B-727 MLS TERPS
3.0 DEGREE CAT-II APPROACH - LANDING SEGMENT
VERTICAL BINS
ALONG TRACK (FT) AT ALTITUDE 100.000

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08045



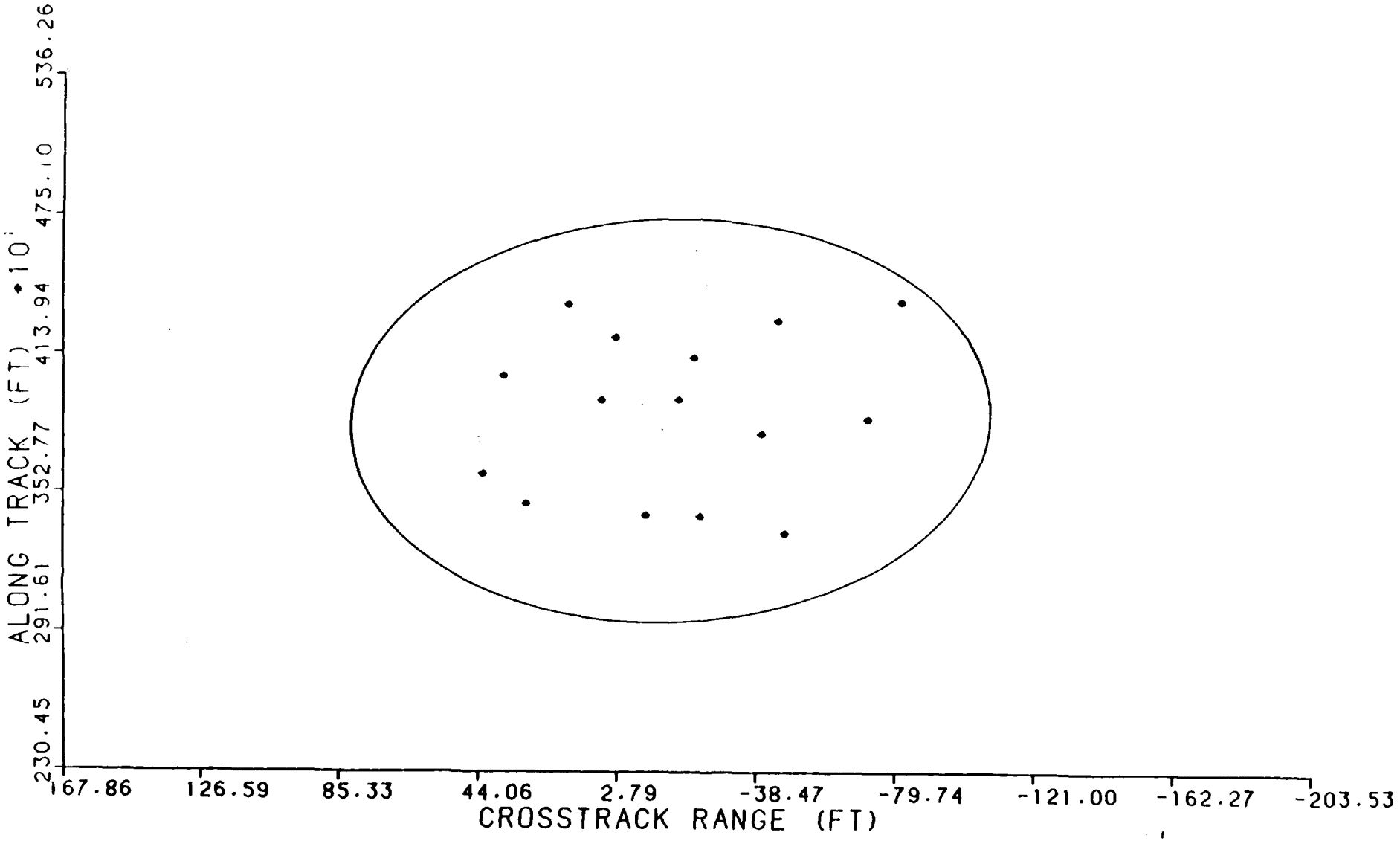
B-727 MLS TERPS
3.0 DEGREE CAT-II APPROACH - LANDING SEGMENT
LONGITUDINAL BINS
ALTITUDE (FT) AT RANGE 1908.114

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08405



B-727 MLS TERPS
3.0 DEGREE APPROACH - LANDING SEGMENT
VERTICAL BINS
ALONG TRACK (FT) AT ALTITUDE 200.000

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NJ 08045



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12-87

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